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SEQUENCE LISTING

<110> McGill University
Rouleau, Guy A.
Lafrenière, Ronald G.
Cossette, Patrick
Ragsdale, David

<120> LOCI FOR IDIOPATHIC GENERALIZED EPILEPSY, MUTATIONS
THEREOF AND METHOD USING SAME TO ASSESS, DIAGNOSE,
PROGNOSE OR TREAT EPILEPSY

<130> GOUD:023

<150> 09/718,355

<151> 2000-11-24

<140> PCT/CA00/01404

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<140? 60/167,623

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<170> PatentIn Ver. 2.1

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tgccccagtg agactgcagc ccttgtaaat actttgacac cttttgcaag aaggaatctg 480
aacaattgca actgaaggca cattgttatc atctcgtctt tgggtgatgc tgttctcac 540
tgcagatgga taattttcct tttaatcagg taagccatct aattgtttca tcttgatttt 600
aagtttattc attccagtta ttcctttgga aaaagagtcc atggaaattc agtttgggca 660
gagcaggaag tccatttttg tatgtgtatt cagaccaact gtccccctcc tccctctcct 720
cctcttcttg tccccctccc cgcgcctccc tctctcaacc ttccatgaac tgaaatcagg 780
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catctggcca 850

<210> 6
<211> 483
<212> DNA
<213> Homo sapiens

<400> 6
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caggacctga cagcttcaac ttcttcacca gagaatctct tgcggctatt gaaagacgca 180
ttgcagaaga aaaggcaaag aatcccaaac cagacaaaaa aagatgacga cgaaaaatgg 240
cccaaagcaa atagtgaact ggaagctgga aagaaccttc catttattta tggagacatt 300
cctccagaga tgggtgtcaga gcccctggag gacctggacc cctactatat caataagaaa 360
gtgagtgttt tttttatcag gcatattttt gctgctaatt gcctactgca ttccttggac 420
tgttgtagca ccaacacatg ccaatagcac aaatctagta tctctgttag aatgaacaca 480
ttt 483

<210> 7
<211> 497
<212> DNA
<213> Homo sapiens

<400> 7
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tggtttctca ttttaacttta caataattta ttatgacaag taacagaaag tagataacag 120
agtttaagt gtttatactt tcatacttct atgttgtgtt cctgtcttac agacttttat 180
agtattgaat aaagggaagg ccatcttccg gttcagtgcc acctctgccc tgtacatttt 240
aactcccttc aatcctctta ggaaaatagc tattaagatt ttggtacatt catatccttt 300
ttcaagtgat taatattaac tatttgtaca tgatctgtaa gcactttata gctaaatatc 360
aaattaagtt gggaaatgtc catattatat aggtttcatc actctcattt tgcattcttg 420
tcatattagc ctcatcttta aagttcatta atcacataga cattactgaa acatgtactc 480
tttaacattt tatatat 497

<210> 8
<211> 501
<212> DNA
<213> Homo sapiens

<400> 8
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cattttacac atgaagaaat tgaaatgtaa ggagattaga agacttgccc acaatgcatt 120
tatccctgaa ttttggtctaa gctgcagttt gggcttttca atgttagctt tttgtaatat 180
aacacttgga ttttgatttt cttttgtgtg ttccttaaca ataacctaca ttattcagca 240
tgctaattat gtgcactatt ttgacaaact gtgtgtttat gacaatgagt aaccctcctg 300
attggacaaa gaatgttagag taagttcaac ttatatTTTT aataacatat atacattygg 360
gattytgaaa ctgtgtctta atgtagtctt aaaataaaaac tgaagagcat tttattaaag 420
tcattcctag acaaaaattac gcagcaagag gacaatgctc attggccctc aggctgctg 480
gcgttatact gattatcact c 501

<210> 9
<211> 563
<212> DNA
<213> Homo sapiens

<400> 9
gctaaataga tttcatatac cttgtatttc tcacactact ctttaagacac tttacgaaac 60
aactctttgt gttaggaagc tgaattttaa tttagggtca cgtttcatTT gtatgaaatt 120
aaaatccatc tgcttagttt tcttttttag tatttatcta ttccactgat ggagtataaa 180
gaaattggta tgctatgaaa aaacactgtt actttatcaa attttttTga tgcttgTTTT 240
cagatacacc ttcacaggaa tatatacttt tgaatcactt ataaaaatta ttgcaagggg 300
attctgttta gaagatttta ctttccttcg ggatccatgg aactggctcg atttactgt 360
cattacattt gcgtaagtgc ctttbytgaa actttaagag agaacatagt ttggTTTTcc 420
atcagtgcct atgcttttaa gaataggttt gctttacctg tagaatattt ttgtgtgatt 480
tatacattca aactctggat ttcaatttag cacaacaaag gtctaagtgg aatttcacta 540
tagcatgaag gctttgcagt agt 563

<210> 10
<211> 253
<212> DNA
<213> Homo sapiens

<400> 10
cttataagcc catgcagtaa tataaatcct gctaaaatct tgaataattc tgatttaatt 60
ctacagggtt gtaacagaat ttgtaaacct aggcaatttt tcagctcttc gcactttcag 120
agtcttgaga gctttgaaaa ctatttcggg aattccaggt aagaagtgat tagagtaaag 180
gataggctct ttgtacctac agctttttct ttgtgtcctg tttttgtgtt tgtgtgtgaa 240
ctcccgcctta cag 253

<210> 11
<211> 340
<212> DNA
<213> Homo sapiens

<400> 11
gtaagaagtg attagagtaa aggataggct ctttgtacct acagcttttt ctttgtgtcc 60
tgtttttTgtg tttgtgtgtg aactcccgcT tacaggtagc tcacagagtt tgtggacctg 120
ggcaatgtct cggcattgag aacattcaga gttctccgag cattgaagac gatttcagtc 180
attccagggt agagcaaggT tagataatga gacggaccca tcatgtgatt cagcatcctt 240
ctctgcttga cattcagttt tacagaaaat caggaatcat aagactaggT gttcaaagaa 300
atgattatta tgtagacat agcttatcag cctggagtta 340

<210> 12
<211> 409
<212> DNA
<213> Homo sapiens

<400> 12
cacgcgtgct tagccctcat agtaatagcc tectaccttc aggcctgaaa accattgtgg 60
gagccctgat ccagtctgtg aagaagctct cagatgtaat gatcctgact gtgttctgtc 120
tgagcgtatt tgctctaatt gggctgcagc tgttcatggg caacctgagg aataaatgta 180
tacaatggcc tcccaccaat gcttccttgg aggaacatag tatagaaaag aatataactg 240
tgaattataa tggtagactt ataaatgaaa ctgtctttga gtttgactgg aagtcataata 300
ttcaagattc aagtaagaat tattgttatg tacatttcct taaaaagtag aattggattg 360
tttgtaacac aaaggataaa tacttgaggg gctggatatc ccattttac 409

<210> 13
<211> 266
<212> DNA
<213> Homo sapiens

<400> 13
cgcgcaataa cttgtgcctt tgaatgaata atatatttaa aattactcaa taaacttaaa 60
agtagaacct gaccttcctg ttctctttga gtgtttttta caatgcaaat gttcagcata 120
cgactttctt ttttcaaaca ggatattcatt atttcctgga gggtttttta gatgcactac 180
tatgtggaaa tagctctgat gcagggttaag tcaatattgt gtgcatctgt gtatattgta 240
tgtacacaat acatatgtgt atcttt 266

<210> 14
<211> 604
<212> DNA
<213> Homo sapiens

<400> 14
agggtgtgaa aatgcaaatt atcaacaaaa attattttgt aaaatattat tagaaatgct 60
gcaccatatt ttaatgatga caccaagtag ctaataagac tatatgcagt caaaagtggg 120
gaaatagatt agttacttat ttgtcaaaact tttattttga aataccaaat ctttctgact 180
aggcaatatc atagcatagt atcagagtaa aaaggcagca gaacgacttg taatactttc 240
ttttacccca cttgcagcca atgtccagag ggatatatgt gtgtgacagc tggtagaaat 300
cccaattatg gctacacaag ctttgatacc ttcagttggg cttttttgtc cttgtttcga 360
ctaagtactc aggacttctg ggaaaatctt tatcaactgg tgagaactaa agagccacac 420
tctccattta agtaaaagta tacaagaaaa ccaattgagt tatgaaatta aaaccggatg 480
ataatatagt agaaagagca gaacttgaca cgagacttga gttcctctat cctattgatt 540
ataacacata ctgagcagag tgatgccaaag gattgcaatt ctctccatt tcttcttggc 600
tcaa 604

<210> 15
<211> 378
<212> DNA
<213> Homo sapiens

<400> 15
ttatatctga gttttgctag ccacatgagt aaattgaaag ttgagcaccc ttagtgaata 60
atattgggaa ataattctga tatttttggg tgagacatt acgtgctgct gggaaaacgt 120
acatgatatt ttttgtattg gtcattttct tgggctcatt ctacctaata aatttgatcc 180


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tggctgtggt ggccatggcc tacgaggaac agaatcaggc caccttggaa gaagcagaac 240
agaaaagggc cgaatttcag cagatgattg aacagcttaa aaagcaacag gaggcagctc 300
aggtaagctg ccctgctcat ggcactgacc tttatcgtct gatgtactat atgagagaag 360
tagtctagag cgtgtgat                                     378

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<210> 16
 <211> 845
 <212> DNA
 <213> Homo sapiens

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<400> 16
caaccctaata taaataccaa tttttaaaagt aaatcaaata ccaaaaagta atgaatttat 60
tttcttggtg atacatgttg gatatttttg aatacgtggt ctgtggagca ttaacagaga 120
cataataaat gttaccatgg agcaaaactaa attatctcca aaagccttca ttaggtagaa 180
agaaaaaaaa aatctcctct tatacttgca gagaatcttc tctgtgagat gatcttcagt 240
cagttcaata tattttttta aagccatgca aatacttcag ccctttcaaa gaaagataca 300
gtctcttcag gtgctatgtt aaaatcattt ctcttcaata tagcaggcag caacggcaac 360
tgcctcagaa cattccagag agcccagtc agcaggcagg ctctcagaca gctcatctga 420
agcctctaag ttgagttcca agagtgttaa ggaaagaaga aatcggagga agaaaagaaa 480
acagaaagag cagtctgggt gggaaagagaa agatgaggat gaattccaaa aatctgaatc 540
tgaggacagc atcaggaggw aagggttttcg cttctccatt gaaggggaacc ggttgacata 600
tgaaaagagg tactcctccc cacaccaggt atggcaactgc tgagtttact gatgcatggt 660
tgaaaattaa aacatgggag agagggggag atttagaaaa tggactcagg aatttttatc 720
aactgaatca accactgttg tggtatattt aaacccatcc cttcttcaca tagttatgca 780
aaaactttac tccacagata tgtaagtcta cagctcgggt tagttaagat aacaccaagt 840
tgaca                                             845

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<210> 17
 <211> 965
 <212> DNA
 <213> Homo sapiens

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<400> 17
cattgccata ttctaaggat gtttcccttt gaacttgaga aatggtcggt caggggtgtgt 60
gtgtatgtgt gtgtgtgtgt gtttcaatat gttaagggtg caatctatct cctcattctt 120
taatcccaag ggctagaaac tttcttttat caaggtaatt taatttaatg tgaatgcaca 180
taaaatgaga atgataatca aaaggaatga accatattct gttatgaatg ctgaaatctc 240
cttctacata atcttgcaaa atgaaatcac attcaaagt ccatattaat atgactctat 300
ttgtbtgctc tttcaaaact ctagtctttg ttgagcatcc gtggctccct attttcacca 360
aggcgaaata gcagaacaag ccttttcagc ttttagaggg gagcaaagga tgtgggatct 420
gagaacgact tcgcagatga tgagcacagc acctttgagg ataacgagag ccgtagagat 480
tccttgtttg tgcccgcag acacggagag agacgcaaca gcaacctgag tcagaccagt 540
aggtcatccc ggtgctggc agtggttcca gcgaatggga agatgcacag cactgtggat 600
tgcaatgggtg tgggttcctt ggttggtgga ccttcagttc ctacatcgcc tgttgacag 660
cttctgccag aggtgataat agataagcca gctactgatg acaatgtaag gaagtyttaa 720
atagttcagg catggctggc tcaactattgc tgcaccagcc agtgtgtcta cagaacggca 780
accttgagaa tgattcctgg ttggtcacgc tgtgaatgca cctgcatctt gtaatatctt 840
tgatagacta accaactaaa acttaaaacc ttagcagtcg cctgcacaaa cctgaatgca 900
tttacttatt aaaagtgcta aggattgatt agacacaata attactgcct ccagttggag 960
gattt                                             965

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<210> 18
 <211> 641
 <212> DNA

<213> Homo sapiens

<400> 18

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aagagtttta tcaactatat taaaattatt ttgtatttta taaaattatg aaatcaggaa 60
gttaacatct tggtttttgc tgtatgacta aatggttaac agtttgaaca ttccaggcta 120
atgatacaat aagtcagaaa tatctgccat caccaattga atatgaaagt gcatgatgca 180
tgtgtttcat gaaattcact gtgtcaccat ttggttgttt gcttgtcata ttgctcaaat 240
taattgttta atgcatttagc attttttttt acagggaaca accactgaaa ctgaaatgag 300
aaagagaagg tcaagtctct tccacgtttc catggacttt ctagaagatc cttcccaaag 360
gcaacgagca atgagtatag ccagcattct aacaaataga gtagaagggt ggtaacaaat 420
tctattttcg tttcaattat tttcaccaaa cttatattgt ctcatittcaa acaaatatat 480
ttgtgagttg ggaatagtgc attctaataa aaagacagtc taattcaaga gctgttattt 540
cttatactca ctcagatatt ctagaagcct taacaattta ttttaaaatg agtgatattg 600
ggactaagac tgttttccta actgtgtagc aactctttga a                                     641
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<210> 19

<211> 818

<212> DNA

<213> Homo sapiens

<400> 19

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gtgaggcggc acatgaaaga ccaccatttt aacctgagggc caagtgtctga gccacaatgg 60
cagtgcataa gacaaaaaac taccatttgt tacctggggc ctatgtgtgt gtctgatgaa 120
ataaccttgg gaggttttaga gtaaaactgta atttttttta caagtacaaa aaagggtgtc 180
tctgtaacaa aaatgtgttg attactgaaa ataagttag tggatatgaa ataaatgtgt 240
gtgtataaag tawacctttt ggtgggtctt tttttttttt ttcttaatct agaacttgaa 300
gaatccaggc agaaatgccc accctgttgg tataaatatt ccaacatatt cttaatctgg 360
gactgttctc catattgggt aaaagtgaag catgttgtca acctgggtgt gatggacca 420
tttgttgacc tggccatcac catctgtatt gtcttaata ctcttttcat ggccatggag 480
cactatccaa tgacggacca tttcaataat gtgcttacag taggaaactt ggtaagcata 540
ttggaaggta aatgtgttta gtcttcaaat tttctgcttg aaaaactgtt tacatttaat 600
tgtgtatagc agtctttcaa ccctcttcca tgcttctctg cccctgcaaa atcgcaatta 660
tatttagctg gctatactct acttttttgc caaaaataat cacccttaat gtgctcacia 720
aaactgagaa aggcataaggc ctacagcact acttgaaaag tcaacagcaa tatttataat 780
ttttcaggat ccagaagtag ctcatagatt aagaacat                                     818
```

<210> 20

<211> 645

<212> DNA

<213> Homo sapiens

<400> 20

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caagccattt cacccatctg aagacctcag tttccttatt tgtaaagtaa taattgtata 60
ttatctactt cgcgtttcca caaggataaa attaaataat gtatatgawa gtctttcatc 120
aactacaaat tgccatacaa atttaagtta gtaatagaat cattgtggga aaatagcata 180
agcattatgt tctaagagca aatcttatgt catgtatgtt attatctggg ggaattagat 240
taatttttgt ttgatcttag gttttcactg ggatctttac agcagaaatg tttctgaaaa 300
ttattgccat ggatccttac tattatttcc aagaaggctg gaatatcttt gacggtttta 360
ttgtgacgct tagcctggta gaacttggaac tcgccaatgt ggaagggtta tctgttctcc 420
gttcattttc atttgtaaaa aaaaaaaaaa aaggaacca attcaaaaac ctttctaaca 480
ttcagggttc ttgcatagca ttgtcatagt ttttttgcca cacaaccatt aggcattgta 540
agtttttctg taacatttgc attgtcaaaa acttttccta catgggaata attctcaatt 600
attaggttac cttagttcaa gggcwaggtc ggaaggtaaa cggtt                                     645
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<210> 21
<211> 829
<212> DNA
<213> Homo sapiens

<400> 21
gaattctaata gaccatttct aggttaaagct caatatatat aatgctttta agaatcatac 60
aaatatatat taatctttca ttttccagct gcgagatttc aagttggcaa aatcttggcc 120
aacgttaaat atgctaataa agatcatcgg caattccgtg ggggctctgg gaaatttaac 180
cctcgtcttg gccatcatcg tcttcatttt tgccgtgggc ggcattgcagc tctttggtaa 240
aagctacaaa gattgtgtct gcaagatcgc cagtgtattgt caactccac gctggcacat 300
gaatgacttc ttccactcck hcctgattgt gttccgcgtg ctgtgtgggg agtggataga 360
gaccatgtgg gactgtatgg aggttgctgg tcaagccatg tgccttactg tcttcatgat 420
ggatcatggg attggaaacc tagcgggatg taccactta agatatgcat tttggaaata 480
caccagcatg gcacatgtat acatatgtaa ctaacctgca cattgtgcac atgtacccta 540
aaacttaaaag tataataaaa aaaaagagta taatttaatg gtgactgttt tgtcaaaaag 600
aaaaacaaac tatgattatt ggtttaaaag tccattacct tggatatatt atcactttta 660
caacacagca atatabcagt gccctgcac tttttatacc aaattctatt ttgtcagtca 720
ctttatcaca ttttttatgt gaattacaat agagtatcat attgagatga gcctaaaagg 780
atgtgctggg accattttat aaattcagag ccaaggaaga gagaagtct 829

<210> 22
<211> 909
<212> DNA
<213> Homo sapiens

<400> 22
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acaaaacctt agattagctc attcaatttc actttacgaa tgggagaact tgagagcaac 120
agaaatcatg tctttgtcca aggatgtgct attgagccag tcacaaattc agatcaccca 180
tcttctaact actatgctgt ggtgtttcct tctcatcaag ttttagaact tagagttttt 240
tccacactta aaagaaagaa taagtgattg taatctgctc ttccctacat tgggtgtaaaa 300
ttataatcat gtttttggtg tttttaaggt cctgaatctc tttctggcct tgcttctgag 360
ctcatttagt gcagacaacc ttgcagccac tgatgatgat aatgaaatga ataactctca 420
aattgctgtg gataggatgc acaaaggagt agcttatgtg aaaagaaaaa tatatgartt 480
tattcaacag tccttcatta ggaaacaaaa gatttttagat gaaattaaac cacttgatga 540
tctaaacaac aagaaagaca gttgtatgtc caatcataca gcagaaattg ggaaagatct 600
tgactatcct aaagatgtaa atggaactac aagtgggtata ggaactggca gcagtgttga 660
aaaatacatt attgatgaaa gtgattacat gtcattcata acaacccca gtcttactgt 720
gactgtacca attgctgtag gagaatctga ctttgaaaat ttaaacacgg aagacttttag 780
tagtgaatcg gatctggaag aaagcaaaga ggtaagattc tataggtgtg ggtaggtatg 840
aatacatata catatatata tatacacaca tacagatgay cctcagctta atgatgtttt 900
tacttaaga 909

<210> 23
<211> 516
<212> DNA
<213> Homo sapiens

<400> 23
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ccccttattc aatctctctt tttctctaaa aatatctcta cctcaagaag aataaaaaac 120
aaattcatag taataatcct tcttggcagg caacttatta ccaaaattaa ggactttact 180
ttctatgtcc atctcactta cagaaactga atgaaagcag tagctcatca gaaggtagca 240
ctgtggacat cggcgcacct gtagaagaac agcccgtagt ggaacctgaa gaaactcttg 300

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aaccggaagc ttgtttcact gaaggtaaag aaaagaatcc taatgttaat ctttcatttg 360
gagtgcagct tatttagctg ttggtcagct aanataaatc acatataata aaatngcact 420
ttgtaataga tataattcaa tcacctctaa tatnttgaca gacaaaaaaa cttaaagtct 480
agtgtcatgc tttgattata tctgccaat atntgg 516

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<210> 24
 <211> 640
 <212> DNA
 <213> Homo sapiens

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<400> 24
ccatttaa at gtggctgaat gtttccacaa cttcacacag ctgatgaatg tgctcttact 60
actctaggct tagagagcta tgctagcaag acagagatga gcatagtaat aaaaagacaa 120
gacaaggaca ttgctaaagg atattatgga agcagagaca ctttatctac ttttatttca 180
acactttctg caggctgtgt acaaagattc aagtgttgtc aaatcaatgt ggaagaaggc 240
agaggaaaac aatggtggaa cctgagaagg acgtgtttcc gaatagttga acataactgg 300
tttgagacct tcattgtttt catgattctc cttagtagtg gtgctctggg gagtgagatt 360
aagaaaagggt gatacagcac taatttttag aacactctaa tactgatgac ttattaatcc 420
tttgtttcat tgtcttagta tccaatgcat ttttaattat cccaccttgt atcttctata 480
gatttactct ataactctat atttctggat taacttttac tatgtatgta aatataattt 540
taagaagcta atcattaatt tttgcttact attaaatagc ccagaaagtg tagcccttca 600
gcttattcat taacaccaa ggatgtgaat attcaattac 640

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<210> 25
 <211> 607
 <212> DNA
 <213> Homo sapiens

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<400> 25
ccacatcagg atacaacatc aagaactatt tcttgactaa gtcaaattaa ttcattggaa 60
tcatactttt ctttttcttc caccaatagt ctttcccctg attaaataag taaaagacct 120
ttgcgaggaa aaaaaaaaaa taacagtaac tactgtttct ctgccctcct attccaatga 180
aatgtcatat gcatatgatt aattttttta atagcttatg gagtataatt atttttgaaa 240
gctaataatg tgtaacattt tctttatagg catttgaaga tatatatatt gaycagcgaa 300
agacgattaa gacgatgttg gaatatgctg acaaggtttt cacttacatt ttcattctgg 360
aaatgcttct aaaatgggtg gcatatggct atcaaacata tttcaccaat gcctggagtt 420
ggctggactt cttaattgtt gatgtaggta tcgttcatat ttttgtctct gttcaaggta 480
gcttgtctta tttatattca aattctacaa tagtgagtct cagaccacta tgttatgttg 540
acagactata atarccacta aacgcatata tgcaatgaga gtgtcatttc tggagacaaa 600
gggctaa 607

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<210> 26
 <211> 336
 <212> DNA
 <213> Homo sapiens

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<400> 26
aaaaattata cttgtcgtat tatatagcaa ctacacattg aatgatgatt ctgtttatta 60
attgttatta ttcygtgtg tgcaggtttc attggtcagt ttaacagcaa atgccttggg 120
ttactcagaa cttggagcct atcaatctct caggacacta agagctctga gacctctaag 180
agccttatct cgatttgaag ggatgagggg aagaaaaatg aaagaacctg aagtattgta 240
tatagccaaa attaaactaa attaaattta gaaaaaagga aaaatgtatg catgcaaaa 300
gaatggcaaa ttcttgcaaa atgctcttta ttgttt 336

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<210> 27
<211> 677
<212> DNA
<213> Homo sapiens

<400> 27
cttggttata ttgcctatag ttgttttcct aagtgtattg ctttaagaaaa aaaaatgaat 60
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 1585 1590 1595 1600

Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu
 1605 1610 1615

Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg
 1620 1625 1630

Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr
 1635 1640 1645

Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly
 1650 1655 1660

Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser
 1665 1670 1675 1680

Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn
 1685 1690 1695

Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr
 1700 1705 1710

Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro
 1715 1720 1725

Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly
 1730 1735 1740

Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile
 1745 1750 1755 1760

Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu
 1765 1770 1775

Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu
 1780 1785 1790

Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp
 1795 1800 1805

Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala
 1810 1815 1820

Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile
 1825 1830 1835 1840

Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp
 1845 1850 1855

Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met
1860 1865 1870

Asp Ala Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro
1875 1880 1885

Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln
1890 1895 1900

Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu
1905 1910 1915 1920

Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys
1925 1930 1935

Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp
1940 1945 1950

Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys Glu
1970 1975 1980

Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys Asp Ile
1985 1990 1995 2000

Arg Glu Ser Lys Lys
2005

<210> 36
<211> 2005
<212> PRT
<213> Homo sapiens

<400> 36
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Phe Thr Arg Glu Ser Leu Ala Ala Ile Glu Gln Arg Ile Ala Glu Glu
20 25 30

Lys Ala Lys Arg Pro Lys Gln Glu Arg Lys Asp Glu Asp Asp Glu Asn
35 40 45

Gly Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Ser Leu Pro Phe
50 55 60

Ile Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Val Pro Leu Glu Asp
65 70 75 80

Leu Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Leu Asn Lys
85 90 95

Gly Lys Ala Ile Ser Arg Phe Ser Ala Thr Pro Ala Leu Tyr Ile Leu

100	105	110
Thr Pro Phe Asn Pro Ile Arg Lys Leu Ala Ile Lys Ile Leu Val His		
115	120	125
Ser Leu Phe Asn Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val		
130	135	140
Phe Met Thr Met Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr		
145	150	155
Thr Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala		
165	170	175
Arg Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn		
180	185	190
Trp Leu Asp Phe Thr Val Ile Thr Phe Ala Tyr Val Thr Glu Phe Val		
195	200	205
Asn Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala		
210	215	220
Leu Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala		
225	230	235
Leu Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val		
245	250	255
Phe Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly		
260	265	270
Asn Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Asp Asn Ser Ser Phe		
275	280	285
Glu Ile Asn Ile Thr Ser Phe Phe Asn Asn Ser Leu Asp Gly Asn Gly		
290	295	300
Thr Thr Phe Asn Arg Thr Val Ser Ile Phe Asn Trp Asp Glu Tyr Ile		
305	310	315
Glu Asp Lys Ser His Phe Tyr Phe Leu Glu Gly Gln Asn Asp Ala Leu		
325	330	335
Leu Cys Gly Asn Ser Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile		
340	345	350
Cys Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp		
355	360	365
Thr Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp		
370	375	380
Phe Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr		
385	390	395
Tyr Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu		

405	410	415
Ile Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Glu Gln Asn 420 425 430		
Gln Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln 435 440 445		
Met Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Ala Ala 450 455 460		
Ala Ala Ala Ser Ala Glu Ser Arg Asp Phe Ser Gly Ala Gly Gly Ile 465 470 475 480		
Gly Val Phe Ser Glu Ser Ser Ser Val Ala Ser Lys Leu Ser Ser Lys 485 490 495		
Ser Glu Lys Glu Leu Lys Asn Arg Arg Lys Lys Lys Lys Gln Lys Glu 500 505 510		
Gln Ser Gly Glu Glu Glu Lys Asn Asp Arg Val Leu Lys Ser Glu Ser 515 520 525		
Glu Asp Ser Ile Arg Arg Lys Gly Phe Arg Phe Ser Leu Glu Gly Ser 530 535 540		
Arg Leu Thr Tyr Glu Lys Arg Phe Ser Ser Pro His Gln Ser Leu Leu 545 550 555 560		
Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Arg Ala Ser 565 570 575		
Leu Phe Ser Phe Arg Gly Arg Ala Lys Asp Ile Gly Ser Glu Asn Asp 580 585 590		
Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Asn Asp Ser Arg Arg 595 600 605		
Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg His Ser Asn 610 615 620		
Val Ser Gln Ala Ser Arg Ala Ser Arg Val Leu Pro Ile Leu Pro Met 625 630 635 640		
Asn Gly Lys Met His Ser Ala Val Asp Cys Asn Gly Val Val Ser Leu 645 650 655		
Val Gly Gly Pro Ser Thr Leu Thr Ser Ala Gly Gln Leu Leu Pro Glu 660 665 670		
Gly Thr Thr Thr Glu Thr Glu Ile Arg Lys Arg Arg Ser Ser Ser Tyr 675 680 685		
His Val Ser Met Asp Leu Leu Glu Asp Pro Thr Ser Arg Gln Arg Ala 690 695 700		
Met Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu		

705	710	715	720
Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Lys Phe Ala Asn Met Cys			
	725	730	735
Leu Ile Trp Asp Cys Cys Lys Pro Trp Leu Lys Val Lys His Leu Val			
	740	745	750
Asn Leu Val Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys			
	755	760	765
Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr			
	770	775	780
Glu Gln Phe Ser Ser Val Leu Ser Val Gly Asn Leu Val Phe Thr Gly			
	785	790	795
Ile Phe Thr Ala Glu Met Phe Leu Lys Ile Ile Ala Met Asp Pro Tyr			
	805	810	815
Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Phe Ile Val Ser			
	820	825	830
Leu Ser Leu Met Glu Leu Gly Leu Ala Asn Val Glu Gly Leu Ser Val			
	835	840	845
Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp			
	850	855	860
Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala			
	865	870	875
Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala			
	885	890	895
Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys			
	900	905	910
Lys Ile Ser Asn Asp Cys Glu Leu Pro Arg Trp His Met His Asp Phe			
	915	920	925
Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile			
	930	935	940
Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu			
	945	950	955
Thr Val Phe Met Met Val Met Val Ile Gly Asn Leu Val Val Leu Asn			
	965	970	975
Leu Phe Leu Ala Leu Leu Leu Ser Ser Phe Ser Ser Asp Asn Leu Ala			
	980	985	990
Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly			
	995	1000	1005
Arg Met Gln Lys Gly Ile Asp Phe Val Lys Arg Lys Ile Arg Glu Phe			

1010	1015	1020
Ile Gln Lys Ala Phe Val Arg Lys Gln Lys Ala Leu Asp Glu Ile Lys		
1025	1030	1035 1040
Pro Leu Glu Asp Leu Asn Asn Lys Lys Asp Ser Cys Ile Ser Asn His		
1045	1050	1055
Thr Thr Ile Glu Ile Gly Lys Asp Leu Asn Tyr Leu Lys Asp Gly Asn		
1060	1065	1070
Gly Thr Thr Ser Gly Ile Gly Ser Ser Val Glu Lys Tyr Val Val Asp		
1075	1080	1085
Glu Ser Asp Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr		
1090	1095	1100
Val Pro Ile Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu		
1105	1110	1115 1120
Glu Phe Ser Ser Glu Ser Asp Met Glu Glu Ser Lys Glu Lys Leu Asn		
1125	1130	1135
Ala Thr Ser Ser Ser Glu Gly Ser Thr Val Asp Ile Gly Ala Pro Ala		
1140	1145	1150
Glu Gly Glu Gln Pro Glu Val Glu Pro Glu Glu Ser Leu Glu Pro Glu		
1155	1160	1165
Ala Cys Phe Thr Glu Asp Cys Val Arg Lys Phe Lys Cys Cys Gln Ile		
1170	1175	1180
Ser Ile Glu Glu Gly Lys Gly Lys Leu Trp Trp Asn Leu Arg Lys Thr		
1185	1190	1195 1200
Cys Tyr Lys Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe		
1205	1210	1215
Met Ile Leu Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile		
1220	1225	1230
Glu Gln Arg Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val		
1235	1240	1245
Phe Thr Tyr Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr		
1250	1255	1260
Gly Phe Gln Val Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu		
1265	1270	1275 1280
Ile Val Asp Val Ser Leu Val Ser Leu Thr Ala Asn Ala Leu Gly Tyr		
1285	1290	1295
Ser Glu Leu Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg		
1300	1305	1310
Pro Leu Arg Ala Leu Ser Arg Phe Glu Gly Met Arg Ala Val Val Asn		

1315	1320	1325
Ala Leu Leu Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys		
1330	1335	1340
Leu Ile Phe Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala		
1345	1350	1355 1360
Gly Lys Phe Tyr His Cys Ile Asn Tyr Thr Thr Gly Glu Met Phe Asp		
	1365	1370 1375
Val Ser Val Val Asn Asn Tyr Ser Glu Cys Lys Ala Leu Ile Glu Ser		
	1380	1385 1390
Asn Gln Thr Ala Arg Trp Lys Asn Val Lys Val Asn Phe Asp Asn Val		
	1395	1400 1405
Gly Leu Gly Tyr Leu Ser Leu Leu Gln Val Ala Thr Phe Lys Gly Trp		
	1410	1415 1420
Met Asp Ile Met Tyr Ala Ala Val Asp Ser Arg Asn Val Glu Leu Gln		
	1425	1430 1435 1440
Pro Lys Tyr Glu Asp Asn Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe		
	1445	1450 1455
Ile Ile Phe Gly Ser Phe Phe Thr Leu Asn Leu Phe Ile Gly Val Ile		
	1460	1465 1470
Ile Asp Asn Phe Asn Gln Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile		
	1475	1480 1485
Phe Met Thr Glu Glu Gln Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu		
	1490	1495 1500
Gly Ser Lys Lys Pro Gln Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe		
	1505	1510 1515 1520
Gln Gly Met Val Phe Asp Phe Val Thr Lys Gln Val Phe Asp Ile Ser		
	1525	1530 1535
Ile Met Ile Leu Ile Cys Leu Asn Met Val Thr Met Met Val Glu Thr		
	1540	1545 1550
Asp Asp Gln Ser Gln Glu Met Thr Asn Ile Leu Tyr Trp Ile Asn Leu		
	1555	1560 1565
Val Phe Ile Val Leu Phe Thr Gly Glu Cys Val Leu Lys Leu Ile Ser		
	1570	1575 1580
Leu Arg Tyr Tyr Tyr Phe Thr Ile Gly Trp Asn Ile Phe Asp Phe Val		
	1585	1590 1595 1600
Val Val Ile Leu Ser Ile Val Gly Met Phe Leu Ala Glu Leu Ile Glu		
	1605	1610 1615
Lys Tyr Phe Val Ser Pro Thr Leu Phe Arg Val Ile Arg Leu Ala Arg		

1620	1625	1630
Ile Gly Arg Ile Leu Arg Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr 1635	1640	1645
Leu Leu Phe Ala Leu Met Met Ser Leu Pro Ala Leu Phe Asn Ile Gly 1650	1655	1660
Leu Leu Leu Phe Leu Val Met Phe Ile Tyr Ala Ile Phe Gly Met Ser 1665	1670	1675 1680
Asn Phe Ala Tyr Val Lys Arg Glu Val Gly Ile Asp Asp Met Phe Asn 1685	1690	1695
Phe Glu Thr Phe Gly Asn Ser Met Ile Cys Leu Phe Gln Ile Thr Thr 1700	1705	1710
Ser Ala Gly Trp Asp Gly Leu Leu Ala Pro Ile Leu Asn Ser Gly Pro 1715	1720	1725
Pro Asp Cys Asp Pro Asp Lys Asp His Pro Gly Ser Ser Val Lys Gly 1730	1735	1740
Asp Cys Gly Asn Pro Ser Val Gly Ile Phe Phe Phe Val Ser Tyr Ile 1745	1750	1755 1760
Ile Ile Ser Phe Leu Val Val Val Asn Met Tyr Ile Ala Val Ile Leu 1765	1770	1775
Glu Asn Phe Ser Val Ala Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu 1780	1785	1790
Asp Asp Phe Glu Met Phe Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp 1795	1800	1805
Ala Thr Gln Phe Ile Glu Phe Ala Lys Leu Ser Asp Phe Ala Asp Ala 1810	1815	1820
Leu Asp Pro Pro Leu Leu Ile Ala Lys Pro Asn Lys Val Gln Leu Ile 1825	1830	1835 1840
Ala Met Asp Leu Pro Met Val Ser Gly Asp Arg Ile His Cys Leu Asp 1845	1850	1855
Ile Leu Phe Ala Phe Thr Lys Arg Val Leu Gly Glu Ser Gly Glu Met 1860	1865	1870
Asp Ala/Leu Arg Ile Gln Met Glu Glu Arg Phe Met Ala Ser Asn Pro 1875	1880	1885
Ser Lys Val Ser Tyr Glu Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln 1890	1895	1900
Glu Glu Val Ser Ala Ile Ile Ile Gln Arg Ala Tyr Arg Arg Tyr Leu 1905	1910	1915 1920
Leu Lys Gln Lys Val Lys Lys Val Ser Ser Ile Tyr Lys Lys Asp Lys		

1925

1930

1935

Gly Lys Glu Cys Asp Gly Thr Pro Ile Lys Glu Asp Thr Leu Ile Asp
1940 1945 1950

Lys Leu Asn Glu Asn Ser Thr Pro Glu Lys Thr Asp Met Thr Pro Ser
1955 1960 1965

Thr Thr Ser Pro Pro Ser Tyr Asp Ser Val Thr Lys Pro Glu Lys Glu
1970 1975 1980

Lys Phe Glu Lys Asp Lys Ser Glu Lys Glu Asp Lys Gly Lys Asp Ile
1985 1990 1995 2000

Arg Glu Ser Lys Lys
2005

<210> 37
<211> 912
<212> DNA
<213> Homo sapiens

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cattatctgt taacaaaatt aacacttaaa atcaacaaag ttttaatggt tcgttccaag 120
aaaagcctgt ggaagatcag ttccacaact gagagctttg ggctgcttca gacatatgtc 180
tgtgtgtacg ctgtgaaggt gtttctcttc acagttcccc gccctctagt ggtagttaca 240
ataatgccat tttgtagtcc ctgtacagga aatgcctctt cttacttcag ttaccagaat 300
ccttttacag gaagttaggt gtggtccttg aaggagaatt aaaaaaaaaa aaaaaaaaaa 360
aaaaaagatt tttttttttt taaagcatga tggaatttta gctgcagtct tcttggggcc 420
agcttatcaa tcccaaaactc tgggggtaaa agattctaca ggggtaaatgt tttattattc 480
ttattatgct tattctctgt gatgcttctc tacctttaca gtagtagaat ccttggggaa 540
atctgcagag ggaccacttt cattttgaag ctgctggctg catgttttag catgtctctt 600
ctattagaga atccaggcat ggcagtttcc tccccagtg tgcaaggacc atcttcatgc 660
ctatgtctgt cgctaggcat gagggctctc aggaatgggt gaaaaaaatg agggatgttt 720
tggaggcact ataatactgg ggagggcagt ctgctagctg gtagctgaaa ggtcctgggt 780
tacttcaaca ttttttttaa ataaaactgt gcagtagttt ttgttatttt agggttccct 840
ctgttttatc tgggtgatgc tgcagaagtg aactgcataa cacatttcac tcttagaaat 900
gcattccata ta 912

<210> 38
<211> 722
<212> DNA
<213> Homo sapiens

<400> 38
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tctgtagcac tttcttatgc aaggagctaa acagtgatta aaggagcagg atgaaaagat 120
ggcacagtca gtgctggtac cgccaggacc tgacagcttc cgcttcttta ccagggaatc 180
ccttgctgct attgaacaac gcattgcaga agagaaagct aagagaccca aacaggaacg 240
caaggatgag gatgatgaaa atggcccaaa gccaaacagt gacttggaag cagsaaaatc 300
tcttccattt atttatggag acattcctcc agagatgggt tcagtgcctc tggaggatct 360
ggacccctac tatatcaata agaaagttag ttcttagtca agttgccttc actgcctatt 420
tactaattgg ttctgggcta gtcccaggga tgatggtgaa gaaggctggc ctccttccct 480
ctgtctaaaag tatcactaag atgctggatg ggcctgaccg tgtaatggac caatgatcct 540

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agaagtcttt tggaagcact catttgaacc tgcatttgtg agacaggcag agaactgggtg 600
aggcatcctc cagcgcgga attaaggaag gacaaaagcc tattcacctt cttgaatata 660
aattatatgc ttaaaccagt gtaaattgac cctgattccc taataatgtt gagaagcaaa 720
aa

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<210> 39
<211> 561
<212> DNA
<213> Homo sapiens

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<400> 39
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agtttatagt gctcagaaaa aaaaagcatc tatcttcacg tcatatgatg gtaattatta 120
tggtatacac tattttacag ggcaatattt ataaataatg gttttacttt tctcttaaaa 180
tattcttaat atataattcta agttttgttt tatgtgtgtg gttttctttt tcagacgttt 240
atagtattga ataaagggaa agcaatctct cgattcagtg ccaccctgc cctttacatt 300
ttaactccct tcaaccctat tagaaaatta gctattaaga ttttggtaga ttcataatcct 360
ttttcaaact gtcacttaat atgattttct tctttgacca agttattgag ctacacattt 420
tccaaaatat ctgtggttgg caatgttatg tgttctttct ttttctttcc ttttactcaa 480
tcgttagcat gttgcaaaat gagatcacag gtaagtgaat tactttcccc cgtcttctaa 540
gtgtttcttc tctacccaac t

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<210> 40
<211> 510
<212> DNA
<213> Homo sapiens

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<400> 40
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tgctgagtta tagaaatggc aaaaaaaagg gtcaataata gaataataag caacaaaata 120
atagtaagca cttaaagtttt aaacttcacg gtggtgaagg catggtagtg cataaaagta 180
agatttttcc attgaaacttt gtcttccttg acgatattct actttattca atatgctcat 240
tatgtgcacg attcttacca actgtgtatt tatgaccatg agtaaccctc cagactggac 300
aaagaatgtg gagtaagtat aaatattttt caatattgac ctccctttat gtttcatatt 360
gtgcttttaa caccttgaga cctcctcaat ttctttaaca aatcatgcta gctactgtta 420
accagaccct gattcaaatt catttctgtc actaaatgtc ttctaggaca aagctttag 480
tgggctcact tagttgtgta aattactgca

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<210> 41
<211> 370
<212> DNA
<213> Homo sapiens

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<400> 41
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caggataacc tttacaggaa tttatacttt tgaatcactt attaaaatac ttgcaagggg 120
cttttgttta gaagatttca catttttacg ggatccatgg aattggttgg atttcacagt 180
cattactttt gcgtaagtat cttatacat tttctatcct ggaagagtaa atcactgggtg 240
ggagcctata ctatattttc cttggtggct tgccttgaca gaccaagcat ttntcttagt 300
aatcatagtt ttcttccaat caaattatcc agtttgaga aattaggaac tatcatagta 360
aattacatgg

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<210> 42

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<211> 370
<212> DNA
<213> Homo sapiens

<400> 42
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gccattttcc tcttaattgg gaaagctgat ggcgacactc atgaaattaa aaaggtcttg 120
atgaaagacc aangaagacg tagattttcc taaattctga ataactctga ttttaattcta 180
caggtatgta acagaatttg taaacctagg caatgtttca gctcttcgaa ctttcagagt 240
cttgagagct ttgaaaacta tttctgtaat tccaggtaag aagaaaatgg tataagggtgg 300
taggccccctt atatctccaa ctgtttcttg tgttctgtca ttgtgtttgt gtgtgaaccc 360
cctattacag 370

<210> 43
<211> 410
<212> DNA
<213> Homo sapiens

<400> 43
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tgtcattgtg tttgtgtgtg aaccccctat tacagatatg tgacagagtt tgtggacctg 120
ggcaatgtct cagcgttgag aacattcaga gttctccgag cattgaaaac aatttcagtc 180
attccagggtg agagctagggt taaacaccga ggctgacttt agctacagtg gtgctacaat 240
cacagctttt gtgcagaagc cttgttgcta gttgcatatt gcaaataaat atgtaaaaaa 300
gcaagaattg gtacatcatt ttttggtagg atttgattct ttgcttttta cccggttgctt 360
tctttaaacc tattctaaat cagcctttga gtttaacaag tgttgcatga 410

<210> 44
<211> 1066
<212> DNA
<213> Homo sapiens

<400> 44
aaagagtgtt tggaataaca catttggttc atttccattc acagttttct aatgaacata 60
caagttctgc tttcattcat tttcaccagc tagtaggctt ttcattgaaa tggtattcaa 120
tcacaaacat taaactaata ttgttggcat tctgcatgac atttttattt tccaggccaa 180
gctcatgata tttttgccgg taaaatagct gttgagtagt atattttaant tcccccttct 240
gattttgttt gtaggcctga agaccattgt gggggccctg atccagtcag tgaagaagct 300
ttctgatgtc atgatcttga ctgtgttctg tctaagcgtg tttgctgtaa taggattgca 360
gttgttcatg ggcaacctac gaaataaatg tttgcaatgg cctccagata attcttcctt 420
tgaaataaat atcacttcct tctttaacaa ttcattggat gggaatggta ctactttcaa 480
taggacagtg agcatattta actgggatga atatatgag gataaaagta agatatactc 540
tataaaccat taagttgttt agttctctaa atattaaata ttatatataa tggaaattat 600
ctcaatttag atgtgaatca agtgacttag actaatttaa gatgatttaa tacatataaa 660
agagatatca aaggatacct tattctattt ttsttatctg tccattgata tagtaaaagt 720
tctcatttga aaatgtgttg tcttatactc atgttgaaag taatttcata ttatgccata 780
ttaaaaaagg tttatttggt agacattaat cagggttttc agtcatttta ataaataagt 840
cagtagtttg aactattcmg cgtattccac tgaaatgtcg ttaagaagac tgaggggaaa 900
taatttggcc ctatttggtt gatgcaacat atgtattgag tacatatgct atatctgaaa 960
ctagagaaac catttatcaa gatgaaataa gaatttgtgt gtcctcaga aggttaagta 1020
accctgattt agccattcac ttcattccata ttctaattag tccctt 1066

<210> 45
<211> 385

<212> DNA
<213> Homo sapiens

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tatgattgaa aacattttgtg agcttttgcca cctaaacagg gtggctgaag tgttttacag 120
gatttttaatg attcttttcta ttcctttctc tttaaatagg tcacttttat tttttacagg 180
ggcaaaatga tgctctgctt tgtggcaaca gctcagatgc agggtaagtg tatgcttcct 240
actgagtttc agtccacact gctccatcag tgtcaataac ctgccacctc ccactcatcc 300
agtcccacca ctctcactc aaaaccctcc ataaattcta cttcacggtg actctcagaa 360
tgaccaggat aagtgtagat tctca 385

<210> 46
<211> 430
<212> DNA
<213> Homo sapiens

<400> 46
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gcttttttct agtgccctgta taaaacagac attggcatat attaaaacag gaaaaccaat 180
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tgaaggatac atctgtgtga aggctggtag aaaccccaac tatggctaca cgagctttga 300
cacctttagt tgggcctttt tgccttatt tctgtctcatg actcaagact tctgggaaaa 360
cctttatcaa ctgggtgagaa cagataaaat catttttctg agaatcataa aacaccgaac 420
tcaagagaat 430

<210> 47
<211> 646
<212> DNA
<213> Homo sapiens

<400> 47
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aaaatctctc ttccattttg cagacactac gtgctgctgg gaaaacgtac atgatatttt 120
ttgtgctggt cattttcttg ggctcattct atctaataaa tttgatcttg gctgtgggtg 180
ccatggccta tgaggaacag aatcaggcca cattggaaga ggctgaacag aaggaagctg 240
aatttcagca gatgctcgaa cagttgaaaa agcaacaaga agaagctcag gtatagtga 300
caagcatacg gtcctttggt tttctgtatc taaattcttt aacctaaatg ttgaggtcag 360
tggcaaggta gttgacatta gaaataggtc atatgtgttt ggtaagtgtc aggagcctgt 420
ttggttatta agaagttatt actttattgc aatgatctct gtcaatagtg tcaatagtaa 480
tggcatcaaa aaatggataa ttataattgc tttactgaca tttttttctc ccttgtgact 540
ccttgaggaa attaatgatt aacaaaggcc tcatgtactc aaacttgtag agtagataaa 600
cctacatgtc ctcaagttgaa gtattttctt aggggaagag gaattc 646

<210> 48
<211> 711
<212> DNA
<213> Homo sapiens

<400> 48
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tgaagctcaa ttaagcagta acatgataat tattttttta gatnatatgc aacttccac 180

atacttttgcg	cccttctagg	cggcagctgc	agccgcatct	gctgaatcaa	gagacttcag	240
tggtgctggg	gggataggag	ttttttcaga	gagttcttca	gtagcatcta	agttgagctc	300
caaaagtga	aaagagctga	aaaacagaag	aaagaaaaag	aaacagaaag	aacagtctgg	360
agaagaagag	aaaaatgaca	gagtcctaaa	atcggaatct	gaagacagca	taagaagaaa	420
aggtttccgt	ttttccttgg	aaggaagtag	gctgacatat	gaaaagagat	tttcttctcc	480
acaccaggta	aaaatattaa	attacatgaa	ttgtgttctc	ataaattttt	taaaagaata	540
tgccagaatt	taatggagag	aaaaccgcct	tccacctgga	tggcacaatg	ctttcagagt	600
agtgatgatt	atcaagtgtt	ttggctatca	cttcagagaa	tttgtgagtt	ttgcaacttt	660
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<210> 49
 <211> 1026
 <212> DNA
 <213> Homo sapiens

<400> 49						
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aagtgccaaa	atgccaccag	cagtcatcag	aggggtgctt	tcttccacat	gtccaatgac	180
ttatccttga	gtaagtcaat	gactatgaca	caatgaatca	aattctgttt	ttcagaatgc	240
cagctcttaa	ctctcttcat	ctcatttttg	tttcttttct	tgttattcat	agtccttact	300
gagcatccgt	ggctcccttt	tctctccaag	acgcaacagt	agggcgagcc	ttttcagctt	360
cagaggtcga	gcaaaggaca	ttggctctga	gaatgacttt	gctgatgatg	agcacagcac	420
ctttgaggac	aatgacagcc	gaagagactc	tctgttcgtg	ccgcacagac	atggagaacg	480
gcgccacagc	aatgtcagcc	aggccagccg	tgcttccagg	gtgctcccca	tcctgccccat	540
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gaatttkttg	agtttsttgc	ccaaaggctg	ggagtttgtt	caatcaagct	gttaactgtc	780
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agagaatata	attagamgtm	atctttcatc	ayyattacta	tggtatgaaa	ctcgccaaaa	900
agcaaagcaa	caatttatca	agcataatgt	tygaytaata	tagttaaatt	aaatccaagg	960
aaattaatgc	tcacaaatta	aataaatact	taaggatttt	gtgattgttg	ttcatttaaa	1020
aggaga						1026

<210> 50
 <211> 601
 <212> DNA
 <213> Homo sapiens

<400> 50						
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aaagcatggg	gtatattttag	ttaaataaca	cctgtttag	gaatgctttg	ggctttgctg	180
ctttcaaaaa	tagtggttat	ttcatctgaa	attctacttc	tagggcacia	ctactgaaac	240
agaaataaga	aagagacggt	ccagttctta	tcatgtttcc	atggatttat	tggaagatcc	300
tacatcaagg	caaagagcaa	tgagtatagc	cagtattttg	accaacacca	tggaagggtat	360
gttaaaagtc	ctgcgtcaca	gttacttggt	gctttcctaa	tgatgaaaaa	cacttcataa	420
atttcaataa	aatacttcct	gacttgatat	tgtatcatta	ttacacattt	tactaaataa	480
cagtaaaatc	cgtgcataac	tcatggattc	atatattcca	cagatttttt	ttttttatat	540
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a						601

<210> 51

<211> 645
<212> DNA
<213> Homo sapiens

<400> 51
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ctgttcctcc agcagattaa cccataatat cttttaacaa ctttagattt tttaaattcc 120
ttttaattta aaccaaactc gcttaataga aagtaagcag ttttcatgag gattctaact 180
ttttttcttc cagaacttga agaatccaga cagaaatgcc caccatgctg gtataaattt 240
gctaatatgt gtttgatttg ggactgttgt aaacatgggt taaagggtgaa acacctgtgc 300
aacctgggtg taatggaccc atttgttgac ctggccatca ccatctgcat tgtcttaaatt 360
acactcttca tggctatgga gcactatccc atgacggagc agttcagcag tgtactgtct 420
gttggaacc tggtaagcct cactgagagt ttctcttcc cttgaaagag ttataatttg 480
ccttagtgaa tttacatat tgctctcaaa ttaaataatca actaattggc catgtatatc 540
ttgacatcaa atgttttagca tcccttttaa ataacaataa aatgttgcta ccatagtgc 600
aaagagtcaa agaatttatg tacaatttga tttagaattg aattt 645

<210> 52
<211> 485
<212> DNA
<213> Homo sapiens

<400> 52
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gttgctcaat aattattcgt gtttcaakas tatttgcctc tataatgaac tacacttctc 120
atntaggtct tcacagggat cttcacagca gaaatgtttc tcaagataat tgccatggat 180
ccatattatt actttcaaga aggctggaat atttttgatg gttttattgt gagccttagt 240
ttaatggaac ttggtttggc aaatgtggaa ggattgtcag ttctccgatc attccggctg 300
gtaaattaac tgggagtgtt cataaaatgt actttrtaat taattagtct tcattctcat 360
ctagtaaaaa tggcaagatt tcccatcatt ataatatatt tgaatacctt ctaaacacaga 420
ttggaattgcc ataccaccaa atggtagttt cttcttcac atagctttaa taaagttcac 480
ttaa 485

<210> 53
<211> 602
<212> DNA
<213> Homo sapiens

<400> 53
acagatttcc tctgtgtgcc atgtgactaa cccattgtgc acatgtaccc taaaaattag 60
tatataataa taaaataaaa taaaataaaa aataaaaaaa taaaataaaa ataaaattgc 120
agattttttt agaaatgcag agattaacac tgttcttgc tttatttcca gctccgagtt 180
ttcaagttgg caaaatcttg gccaaactta aatatgctaa ttaagatcat tggcaattct 240
gtgggggctc taggaaacct caccttggtt ttggccatca tctgtctcat ttttgctgtg 300
gtcggcacgc agctcttttg taagagctac aaagaatgtg tctgcaagat ttccaatgat 360
tgtgaactcc cacgctggca catgcatgac tttttccact cttcctgat cgtgttccgc 420
gtgctgtgtg gagagtggat agagaccatg tgggactgta tggaggtcgc tggccaaacc 480
atgtgcctta ctgtcttcat gatggtcatg gtgattggaa atctagtggg atgtagcaaa 540
aacattttcc tcattttcat taaaataaat gtaatcatta aaaagtgttc aactgaagaa 600
ta 602

<210> 54
<211> 803
<212> DNA

<213> Homo sapiens

<400> 54

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agtattattt tatattgacc aagcattttt atttcattca ctttttttca gaatagtgtg 120
tcatgaatta gcagaaatgc atgttagaat aaaataaggt gtcaagaaca atcttagaaa 180
actaatgatg gaaagcaatt gaagcaatag aatgttttga tcacctgttt ttctgtctgt 240
gtttcagggt ctgaacctct tcttggcctt gcttttgagt tccttcagtt ctgacaatct 300
tgctgccact gatgatgata acgaaatgaa taatctccag attgctgtgg gaaggatgca 360
gaaaggaatc gattttgtta aaagaaaaat acgtgaattt attcagaaaag cctttgttag 420
gaagcagaaa gctttgatag aaattaaacc gcttgaagat ctaaataata aaaaagacag 480
ctgtatttcc aaccatacca ccatagaaat aggcaagac ctcaattatc tcaaagacgg 540
aaatggaact actagtggca taggcagcag tgtagaaaaa tatgtcgtgg atgaaagtga 600
ttacatgtca ttataaaaca accctagcct cactgtgaca gtaccaattg ctgttgaga 660
atctgacttt gaaaatttaa atactgaaga attcagcagc gagtcagata tggaggaaaag 720
caaagaggta aaatgtttaa taaggagata ttttggtgta tataatctgt gttaaatact 780
aggtgtttta tgctgtctc tgt 803
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<210> 55

<211> 615

<212> DNA

<213> Homo sapiens

<400> 55

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aaaaaaaaata ctatggtggt gtatctaata ttgtgacccc tgacctttac caaagcggat 120
tggcattatg tttaagttct taattacaga tcaagaaaaa tgcatacaga agatgggggg 180
gggcacacct aattaatttt tatatttaga ttaaagaaaa taattaaatg tgtttttttg 240
tgggattgat tttcagaagc taaatgcaac tagttcatct gaaggcagca cggttgatat 300
tggagctccc gccgagggag aacagcctga ggttgaacct gaggaatccc ttgaacctga 360
agcctgtttt acagaagnnn nnnnnnaagc aaaacaataa catatgtggt cttgagtatc 420
ctcttttcta cccatttttt cctattttat taaatgtctg tttatttgc taccatctag 480
ttcatctatc tatctgtatc tatctatcta tctatctatc tagtaatcat ctatacctat 540
ccaacaactg tacattttatt tgtttttttt ttttgcatth gctgtttgaa aaaaaatgca 600
acgtttttaa ggcaa 615
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<210> 56

<211> 400

<212> DNA

<213> Homo sapiens

<400> 56

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gatagctttt gtaagcggaa gctatcttaa aaattaatgt tatttacaat gtattatcag 60
gtaataatgt aaatgaatct cccaccaaca caaatatacc taatcaaaga gtaatttttt 120
gtcttcattt ttttcccaca tatttttagac tgtgtacgga agttcaagtg ttgtcagata 180
agcatagaag aaggcaagg gaaactctgg tgggaatttg ggaaaacatg ctataagata 240
gtggagcaca attggttcga aaccttcatt gtcttcatga ttctgctgag cagtggggct 300
ctggttagtg atgcatgatc cactccttca cctttcatct gaaatctttt ccctttccct 360
tcaatcaact catattaccc actttttaa taaggtggtt 400
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<210> 57

<211> 560

<212> DNA

<213> Homo sapiens


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<400> 57
aaattactga aacccttggt tgactgaaat gccagtcag cagtcattta tgatcagata 60
atgataaagt aaaattcagc catgggaaac attaaacctt ccagccttag gcacctgata 120
agagcttgca tcgtttcctt ttttaagaaa tcatcaatta gagactgttt ctgatcataa 180
aatttaatag aattttttga cttacaggcc tttgaagata tatacattga gcagcgaaaa 240
accattaaga ccatggttaga atatgctgac aagggttttca cttacatatt cattctggaa 300
atgctgctaa agtgggttgc atatgggtttt caagtgtatt ttaccaatgc ctgggtgctgg 360
ctagacttcc tgattgttga tgtgagtatg ctgcactttg ctgctttatt cattggcata 420
tatgtaatag ttctagcaat ggtgcctgac acagtgtagg cactcagtaa cactgtatca 480
gcccaaatat aaattatgtt tctcatttca cagtgaagagg atgcctcaaa acatttttta 540
ccaatttaaa tacatatata 560

```

```

<210> 58
<211> 480
<212> DNA
<213> Homo sapiens

```

```

<400> 58
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agacccctgg gtgattttga aactcatgaa agtctgagaa ttactgattc attgcataga 120
gcaaggctga actgtgtaga cttttttata tgtaataaag aaaattgtgt tgctttttct 180
gtataggtct cactgggttag cttaactgca aatgccttgg gttactcaga acttgggtgcc 240
atcaaatccc tcagaacact aagagctctg aggccactga gagctttgtc ccggtttgaa 300
ggaatgaggg taagactgaa tgccttagag tttgtcagaa ttattattga gagcagactg 360
acactttgta ccatggaaat gtcaaattta tggagaattt gtgtcttaca cattcatact 420
gacatagcta atcaatcaaa aataatattt accagatgcc cataatactt ggcaactgctg 480

```

```

<210> 59
<211> 640
<212> DNA
<213> Homo sapiens

```

```

<400> 59
taattttaaa attcttagtt ggagctacca gagtctagtt tctacccaat attcaacttt 60
gaaacagatt tttttaatca tttgactgtt cttttaataa tgtttaaaaa taagtaaata 120
tttggtgttg gcttttcact ttttttcct tctcatcctg tgccagggtg ttgtaaatgc 180
tcttttagga gccattccat ctatcatgaa tgtacttctg gtttgtctga tcttttggt 240
aatattcagt atcatgggag tgaatctctt tgctggcaag ttttaccatt gtattaatta 300
caccactgga gagatgtttg atgtaagcgt ggtcaacaac tacagtgagt gcaaagctct 360
cattgagagc aatcaaactg ccagggtggaa aaatgtgaaa gtaaactttg ataacgtagg 420
acttgatat ctgtctctac ttcaagtagt aagtaatcac tttattattt tccatgatgt 480
gtaattaaaa tgagtctaaa gtttttcttc ctcataatga gatatccacc tgttagaatg 540
gctattatca aacagataaa tgacaataaa tgctggcaag aatgtgaaga aaaggggaacc 600
cttgtagcatt gttggcaggg atgtaaatta gtatagcttt 640

```

```

<210> 60
<211> 480
<212> DNA
<213> Homo sapiens

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```

<400> 60
atgtgaagta ttttcaatgc atatcgcaaa acattgcccc aaaagtgaat acaaatttca 60
agcttattta tatgcctgta ttgaatacat gtcaaataga attttgatca attattcaat 120

```

```

ttatttttcta aaattataat tttgggaaaa aagaaaatga tatgactttt cttacaggcc 180
acgtttaagg gatggatgga tattatgtat gcagctgttg attcacgaaa tgtaagtcta 240
gtagaggga aattgttttag tttgattaaa tgtatatttc tacaatattg taatttagtg 300
atattgtcaa taaaataaaa ttatgtgctt aatttataaa acccatctat attataagga 360
taaaatattt aatcatacta tttctttcaa aattatcata ggatgatttt ctctaatac 420
tctgtatctt ttaacatatc ttttctagta tttagcaagg cacctgacac aaaactttat 480

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<210> 61
 <211> 366
 <212> DNA
 <213> Homo sapiens

```

<400> 61
taaaacatgc ttagataatt aaaaactcac tgatgtactt tttgtgaaac aagtactaga 60
tataatgggt acaattcttc atattcttta ggtagaatta caaccgaagt atgaagacaa 120
cctgtacatg tatctttatt ttgtcatctt tattattttt gggtcattct ttaccttgaa 180
tcttttcatt ggtgtcatca tagataactt caaccaacag aaaaagaaga taagtatatt 240
aaaacttcac cttgtctctg aaatatgaac taaatatctt atactctttc ctttagcctc 300
caaaatgcaa tcaccaaaaa aagaatataa aattcagaaa ttattttgag acatttgata 360
atcgat

```

<210> 62
 <211> 560
 <212> DNA
 <213> Homo sapiens

```

<400> 62
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aaatatgact aatatggcat aatttatata ttgaataaag gcatctctat aaatacagat 120
attagtaaca atagaatgaa atgtgggagc caattttcac atgattacta aggtggattt 180
tatagccagc aaagaacaca attttaacaa gtgttgcttt catttcttta ctttggagggt 240
caagacattt ttatgacaga agaacagaag aaatactaca atgcaatgaa aaaactgggt 300
tcaaagaaac cacaaaaacc catacctcga cctgctgtaa gaataacata ttttcattgc 360
ctgttaaaac tatattacct aaccgtttca cagcccgaat ttctagaaac tagttatttt 420
tgtggatttg taacacaaag ttttttacct taacaatggg actagctagc ctaaaatagct 480
tgaaaaatgt actttacata tataatatgt ataaattata taatgcataa catattttat 540
atgtaaacad ataaaatata

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<210> 63
 <211> 650
 <212> DNA
 <213> Homo sapiens

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<400> 63
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gtttctaagt gaacttttac atattatttg ttccagaaca aattccaagg aatggctctt 180
gattttgtaa ccaaacaagt ctttgatctc agcatcatga tcctcatctg ccttaacatg 240
gtcaccatga tgggtggaac cgatgaccag agtcaagaaa tgacaaacat tctgtactgg 300
attaatctgg tgtttattgt tctgttcact ggagaatgtg tgctgaaact gatctctctt 360
cgttactact atttccactat tggatggaat atttttgatt ttgtgggtgg cattctctcc 420
attgtaggta agaagagggt cttttattca gtttaaggaa atagtggtaa aaatatgtgt 480
tttaaaactt tagagggtgt tttcactaat tttctcatt catcccaaac tcccaataa 540
aaatctaata gtccattggt ttagtttttag tttgccattt ctctaattgc atgctgtgct 600

```

tgaaatgatg agtggaatac aaggaattta tattttcagc tttcatttat

650

<210> 64
<211> 3700
<212> DNA
<213> Homo sapiens

<400> 64
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actttcattt gctactatta agtataacaa tatttttggt atttggtgat tttctacagg 180
aatgtttctg gctgaactga tagaaaagta ttttgtgtcc cctaccctgt tccgagtgat 240
ccgtcttgcc aggattggcc gaatcctacg tctgatcaaa ggagcaaagg ggatccgcac 300
getgctcttt gctttgatga tgtcccttcc tgcgttggtt aacatcgcc tccttctttt 360
cctggctcatg ttcactacg ccatctttgg gatgtccaat tttgcctatg ttaagaggga 420
agttgggacg gatgacatgt tcaactttga gacctttggc aacagcatga tctgcctgtt 480
ccaaattaca acctctgctg gctgggatgg attgctagca cctattctta atagtggacc 540
tccagactgt gaccctgaca aagatcaccc tggaaagctca gttaaaggag actgtgggaa 600
cccactgtgt gggattttct ttttgtcag ttacatcatc atatccttcc tggttgtggt 660
gaacatgtac atcgcggtca tccctggagaa cttcagtgtt gctactgaag aaagtgcaga 720
gcctctgagt gaggatgact ttgagatgtt ctatgagggt tgggagaagt ttgatcccga 780
tgcgacccag tttatagagt ttgccaaact ttctgatttt gcagatgccc tggatcctcc 840
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tggtgaccgg atccactgtc ttgacatctt atttgctttt acaaagcgtg ttttgggtga 960
gagtggagag atggatgccc ttcgaataca gatggaagag cgattcatgg catcaaacc 1020
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tgctattatt atccagaggg cttacagacg ctacctcttg aagcaaaaag ttaaaaagg 1140
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tactctcatt gataaactga atgagaattc aactccagag aaaaccgata tgacgccttc 1260
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agacaaatca gaaaaggaag acaaagggaa agatatcagg gaaagtaaaa agtaaaaaga 1380
aaccaagaat tttccatttt gtgatcaatt gtttacagcc cgtgatggtg atgtgtttgt 1440
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 1445 1450 1455
 Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
 1460 1465 1470
 Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1475 1480 1485
 Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys Tyr
 1490 1495 1500
 Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe
 1505 1510 1515 1520

Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
 1525 1530 1535

Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
 1540 1545 1550

Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
 1555 1560 1565

Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1570 1575 1580

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1585 1590 1595 1600

Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
 1605 1610 1615

Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
 1620 1625 1630

Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
 1635 1640 1645

Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
 1650 1655 1660

Leu Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
 1665 1670 1675 1680

Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695

Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
 1700 1705 1710

Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
 1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe
 1730 1735 1740

Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
 1745 1750 1755 1760

Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
 1765 1770 1775

Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
 1780 1785 1790

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1795 1800 1805

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
1905 1910 1915 1920

Tyr Asp Ser Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys
1925 1930 1935

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1940 1945 1950

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<212> PRT
<213> Homo sapiens

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35 40 45

Pro Lys Pro Asn Ser Asp Leu Glu Ala Gly Lys Asn Leu Pro Phe Ile
50 55 60

Tyr Gly Asp Ile Pro Pro Glu Met Val Ser Glu Pro Leu Glu Asp Leu
65 70 75 80

Asp Pro Tyr Tyr Ile Asn Lys Lys Thr Phe Ile Val Met Asn Lys Gly
85 90 95

Lys Ala Ile Ser Arg Phe Ser Ala Thr Ser Ala Leu Tyr Ile Leu Thr
100 105 110

Pro Leu Asn Pro Val Arg Lys Ile Ala Xaa Lys Ile Leu Val His Ser
115 120 125

Leu Phe Ser Met Leu Ile Met Cys Thr Ile Leu Thr Asn Cys Val Phe
130 135 140

Met Thr Leu Ser Asn Pro Pro Asp Trp Thr Lys Asn Val Glu Tyr Thr
 145 150 155 160
 Phe Thr Gly Ile Tyr Thr Phe Glu Ser Leu Ile Lys Ile Leu Ala Arg
 165 170 175
 Gly Phe Cys Leu Glu Asp Phe Thr Phe Leu Arg Asp Pro Trp Asn Trp
 180 185 190
 Leu Asp Phe Ser Val Ile Val Met Ala Tyr Val Thr Glu Phe Val Ser
 195 200 205
 Leu Gly Asn Val Ser Ala Leu Arg Thr Phe Arg Val Leu Arg Ala Leu
 210 215 220
 Lys Thr Ile Ser Val Ile Pro Gly Leu Lys Thr Ile Val Gly Ala Leu
 225 230 235 240
 Ile Gln Ser Val Lys Lys Leu Ser Asp Val Met Ile Leu Thr Val Phe
 245 250 255
 Cys Leu Ser Val Phe Ala Leu Ile Gly Leu Gln Leu Phe Met Gly Asn
 260 265 270
 Leu Arg Asn Lys Cys Leu Gln Trp Pro Pro Ser Asp Ser Ala Phe Glu
 275 280 285
 Thr Asn Thr Thr Ser Tyr Phe Asn Gly Thr Met Asp Ser Asn Gly Thr
 290 295 300
 Phe Val Asn Val Thr Met Ser Thr Phe Asn Trp Lys Asp Tyr Ile Gly
 305 310 315 320
 Asp Asp Ser His Phe Tyr Val Leu Asp Gly Gln Lys Asp Pro Leu Leu
 325 330 335
 Cys Gly Asn Gly Ser Asp Ala Gly Gln Cys Pro Glu Gly Tyr Ile Cys
 340 345 350
 Val Lys Ala Gly Arg Asn Pro Asn Tyr Gly Tyr Thr Ser Phe Asp Thr
 355 360 365
 Phe Ser Trp Ala Phe Leu Ser Leu Phe Arg Leu Met Thr Gln Asp Tyr
 370 375 380
 Trp Glu Asn Leu Tyr Gln Leu Thr Leu Arg Ala Ala Gly Lys Thr Tyr
 385 390 395 400
 Met Ile Phe Phe Val Leu Val Ile Phe Leu Gly Ser Phe Tyr Leu Val
 405 410 415
 Asn Leu Ile Leu Ala Val Val Ala Met Ala Tyr Glu Gly Gln Asn Gln
 420 425 430
 Ala Thr Leu Glu Glu Ala Glu Gln Lys Glu Ala Glu Phe Gln Gln Met
 435 440 445

Leu Glu Gln Leu Lys Lys Gln Gln Glu Glu Ala Gln Ala Val Ala Ala
 450 455 460

Ala Ser Ala Ala Ser Arg Asp Phe Ser Gly Ile Gly Gly Leu Gly Glu
 465 470 475 480

Leu Leu Glu Ser Ser Ser Glu Ala Ser Lys Leu Ser Ser Lys Ser Ala
 485 490 495

Lys Glu Trp Arg Asn Arg Arg Lys Lys Arg Arg Gln Arg Glu His Leu
 500 505 510

Glu Gly Asn Asn Lys Gly Glu Arg Asp Ser Phe Pro Lys Ser Glu Ser
 515 520 525

Glu Asp Ser Val Lys Arg Ser Ser Phe Leu Phe Ser Met Asp Gly Asn
 530 535 540

Arg Leu Thr Ser Asp Lys Lys Phe Cys Ser Pro His Gln Ser Leu Leu
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Ser Ile Arg Gly Ser Leu Phe Ser Pro Arg Arg Asn Ser Lys Thr Ser
 565 570 575

Ile Phe Ser Phe Arg Gly Arg Ala Lys Asp Val Gly Ser Glu Asn Asp
 580 585 590

Phe Ala Asp Asp Glu His Ser Thr Phe Glu Asp Ser Glu Ser Arg Arg
 595 600 605

Asp Ser Leu Phe Val Pro His Arg His Gly Glu Arg Arg Asn Ser Asn
 610 615 620

Gly Thr Thr Thr Glu Thr Glu Val Arg Lys Arg Arg Leu Ser Ser Tyr
 625 630 635 640

Gln Ile Ser Met Glu Met Leu Glu Asp Ser Ser Gly Arg Gln Arg Ala
 645 650 655

Val Ser Ile Ala Ser Ile Leu Thr Asn Thr Met Glu Glu Leu Glu Glu
 660 665 670

Ser Arg Gln Lys Cys Pro Pro Cys Trp Tyr Arg Phe Ala Asn Val Phe
 675 680 685

Leu Ile Trp Asp Cys Cys Asp Ala Trp Leu Lys Val Lys His Leu Val
 690 695 700

Asn Leu Ile Val Met Asp Pro Phe Val Asp Leu Ala Ile Thr Ile Cys
 705 710 715 720

Ile Val Leu Asn Thr Leu Phe Met Ala Met Glu His Tyr Pro Met Thr
 725 730 735

Glu Gln Phe Ser Ser Val Leu Thr Val Gly Asn Leu Val Phe Thr Gly
 740 745 750

Ile Phe Thr Ala Glu Met Val Leu Lys Ile Ile Ala Met Asp Pro Tyr
 755 760 765
 Tyr Tyr Phe Gln Glu Gly Trp Asn Ile Phe Asp Gly Ile Ile Val Ser
 770 775 780
 Leu Ser Leu Met Glu Leu Gly Leu Ser Asn Val Glu Gly Leu Ser Val
 785 790 795 800
 Leu Arg Ser Phe Arg Leu Leu Arg Val Phe Lys Leu Ala Lys Ser Trp
 805 810 815
 Pro Thr Leu Asn Met Leu Ile Lys Ile Ile Gly Asn Ser Val Gly Ala
 820 825 830
 Leu Gly Asn Leu Thr Leu Val Leu Ala Ile Ile Val Phe Ile Phe Ala
 835 840 845
 Val Val Gly Met Gln Leu Phe Gly Lys Ser Tyr Lys Glu Cys Val Cys
 850 855 860
 Lys Ile Asn Asp Asp Cys Thr Leu Pro Arg Trp His Met Asn Asp Phe
 865 870 875 880
 Phe His Ser Phe Leu Ile Val Phe Arg Val Leu Cys Gly Glu Trp Ile
 885 890 895
 Glu Thr Met Trp Asp Cys Met Glu Val Ala Gly Gln Thr Met Cys Leu
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 Ile Val Phe Met Leu Val Met Val Ile Gly Asn Leu Val Val Leu Asn
 915 920 925
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 Ala Thr Asp Asp Asp Asn Glu Met Asn Asn Leu Gln Ile Ala Val Gly
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 Arg Met Gln Lys Gly Ile Asp Tyr Val Lys Asn Lys Met Arg Glu Cys
 965 970 975
 Phe Gln Lys Ala Phe Phe Arg Lys Pro Lys Val Ile Glu Ile His Glu
 980 985 990
 Gly Asn Lys Ile Asp Ser Cys Met Ser Asn Asn Thr Gly Ile Glu Ile
 995 1000 1005
 Ser Lys Glu Leu Asn Tyr Leu Arg Asp Gly Asn Gly Thr Thr Ser Gly
 1010 1015 1020
 Val Gly Thr Gly Ser Ser Val Glu Lys Tyr Val Ile Asp Glu Asn Asp
 1025 1030 1035 1040
 Tyr Met Ser Phe Ile Asn Asn Pro Ser Leu Thr Val Thr Val Pro Ile
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Ala Val Gly Glu Ser Asp Phe Glu Asn Leu Asn Thr Glu Glu Phe Ser
 1060 1065 1070

Ser Glu Ser Glu Leu Glu Glu Ser Lys Glu Lys Leu Asn Ala Thr Ser
 1075 1080 1085

Ser Ser Glu Gly Ser Thr Val Asp Val Val Leu Pro Arg Glu Gly Glu
 1090 1095 1100

Gln Ala Glu Thr Glu Pro Glu Glu Asp Leu Lys Pro Glu Ala Cys Phe
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Thr Glu Gly Cys Ile Lys Lys Phe Pro Phe Cys Gln Val Ser Thr Glu
 1125 1130 1135

Glu Gly Lys Gly Lys Ile Trp Trp Asn Leu Arg Lys Thr Cys Tyr Ser
 1140 1145 1150

Ile Val Glu His Asn Trp Phe Glu Thr Phe Ile Val Phe Met Ile Leu
 1155 1160 1165

Leu Ser Ser Gly Ala Leu Ala Phe Glu Asp Ile Tyr Ile Glu Gln Arg
 1170 1175 1180

Lys Thr Ile Lys Thr Met Leu Glu Tyr Ala Asp Lys Val Phe Thr Tyr
 1185 1190 1195 1200

Ile Phe Ile Leu Glu Met Leu Leu Lys Trp Val Ala Tyr Gly Phe Gln
 1205 1210 1215

Thr Tyr Phe Thr Asn Ala Trp Cys Trp Leu Asp Phe Leu Ile Val Asp
 1220 1225 1230

Val Ser Leu Val Ser Leu Val Ala Asn Ala Leu Gly Tyr Ser Glu Leu
 1235 1240 1245

Gly Ala Ile Lys Ser Leu Arg Thr Leu Arg Ala Leu Arg Pro Leu Arg
 1250 1255 1260

Ala Leu Ser Arg Phe Glu Gly Met Arg Val Val Val Asn Ala Leu Val
 1265 1270 1275 1280

Gly Ala Ile Pro Ser Ile Met Asn Val Leu Leu Val Cys Leu Ile Phe
 1285 1290 1295

Trp Leu Ile Phe Ser Ile Met Gly Val Asn Leu Phe Ala Gly Lys Phe
 1300 1305 1310

Tyr His Cys Val Asn Met Thr Thr Gly Asn Met Phe Asp Ile Ser Asp
 1315 1320 1325

Val Asn Asn Leu Ser Asp Cys Gln Ala Leu Gly Lys Gln Ala Arg Trp
 1330 1335 1340

Lys Asn Val Lys Val Asn Phe Asp Asn Val Gly Ala Gly Tyr Leu Ala
 1345 1350 1355 1360

Leu Leu Gln Val Ala Thr Phe Lys Gly Trp Met Asp Ile Met Tyr Ala
 1365 1370 1375

Ala Val Asp Ser Arg Asp Val Lys Leu Gln Pro Val Tyr Glu Glu Asn
 1380 1385 1390

Leu Tyr Met Tyr Leu Tyr Phe Val Ile Phe Ile Ile Phe Gly Ser Phe
 1395 1400 1405

Phe Thr Leu Asn Leu Phe Ile Gly Val Ile Ile Asp Asn Phe Asn Gln
 1410 1415 1420

Gln Lys Lys Lys Phe Gly Gly Gln Asp Ile Phe Met Thr Glu Glu Gln
 1425 1430 1435 1440

Lys Lys Tyr Tyr Asn Ala Met Lys Lys Leu Gly Ser Lys Lys Pro Gln
 1445 1450 1455

Lys Pro Ile Pro Arg Pro Ala Asn Lys Phe Gln Gly Met Val Phe Asp
 1460 1465 1470

Phe Val Thr Arg Gln Val Phe Asp Ile Ser Ile Met Ile Leu Ile Cys
 1475 1480 1485

Leu Asn Met Val Thr Met Met Val Glu Thr Asp Asp Gln Gly Lys Tyr
 1490 1495 1500

Met Thr Leu Val Leu Ser Arg Ile Asn Leu Val Phe Ile Val Leu Phe
 1505 1510 1515 1520

Thr Gly Glu Phe Val Leu Lys Leu Val Ser Leu Arg His Tyr Tyr Phe
 1525 1530 1535

Thr Ile Gly Trp Asn Ile Phe Asp Phe Val Val Val Ile Leu Ser Ile
 1540 1545 1550

Val Gly Met Phe Leu Ala Glu Met Ile Glu Lys Tyr Phe Val Ser Pro
 1555 1560 1565

Thr Leu Phe Arg Val Ile Arg Leu Ala Arg Ile Gly Arg Ile Leu Arg
 1570 1575 1580

Leu Ile Lys Gly Ala Lys Gly Ile Arg Thr Leu Leu Phe Ala Leu Met
 1585 1590 1595 1600

Met Ser Leu Pro Ala Leu Phe Asn Ile Gly Leu Leu Leu Phe Leu Val
 1605 1610 1615

Met Phe Ile Tyr Ala Ile Phe Gly Met Ser Asn Phe Ala Tyr Val Lys
 1620 1625 1630

Lys Glu Ala Gly Ile Asp Asp Met Phe Asn Phe Glu Thr Phe Gly Asn
 1635 1640 1645

Ser Met Ile Cys Leu Phe Gln Ile Thr Thr Ser Ala Gly Trp Asp Gly
 1650 1655 1660

Leu Leu Ala Pro Ile Leu Asn Ser Ala Pro Pro Asp Cys Asp Pro Asp
 1665 1670 1675 1680

Thr Ile His Pro Gly Ser Ser Val Lys Gly Asp Cys Gly Asn Pro Ser
 1685 1690 1695

Val Gly Ile Phe Phe Phe Val Ser Tyr Ile Ile Ile Ser Phe Leu Val
 1700 1705 1710

Val Val Asn Ser Tyr Ile Ala Val Ile Leu Glu Asn Phe Ser Val Ala
 1715 1720 1725

Thr Glu Glu Ser Ala Glu Pro Leu Ser Glu Asp Asp Phe Glu Met Phe
 1730 1735 1740

Tyr Glu Val Trp Glu Lys Phe Asp Pro Asp Ala Thr Gln Phe Ile Glu
 1745 1750 1755 1760

Phe Ser Lys Leu Ser Asp Phe Ala Ala Ala Leu Asp Pro Pro Leu Leu
 1765 1770 1775

Ile Ala Lys Pro Asn Lys Val Gln Leu Ile Ala Met Asp Leu Pro Met
 1780 1785 1790

Val Ser Gly Asp Arg Ile His Cys Leu Asp Ile Leu Phe Ala Phe Thr
 1795 1800 1805

Lys Arg Val Leu Gly Glu Ser Gly Glu Met Asp Ala Leu Arg Ile Gln
 1810 1815 1820

Met Glu Asp Arg Phe Met Ala Ser Asn Pro Ser Lys Val Ser Tyr Glu
 1825 1830 1835 1840

Pro Ile Thr Thr Thr Leu Lys Arg Lys Gln Glu Glu Val Ser Ala Ala
 1845 1850 1855

Ile Ile Gln Arg Asn Phe Arg Cys Tyr Leu Leu Lys Gln Arg Leu Lys
 1860 1865 1870

Asn Ile Ser Ser Asn Tyr Asn Lys Glu Ala Ile Lys Gly Arg Ile Asp
 1875 1880 1885

Leu Pro Ile Lys Gln Asp Met Ile Ile Asp Lys Leu Asn Gly Asn Ser
 1890 1895 1900

Thr Pro Glu Lys Thr Asp Gly Ser Ser Ser Thr Thr Ser Pro Pro Ser
 1905 1910 1915 1920

Tyr Asp Ser Val Thr Lys Pro Asp Lys Glu Lys Phe Glu Lys Asp Lys
 1925 1930 1935

Pro Glu Lys Glu Ser Lys Gly Lys Glu Val Arg Glu Asn Gln Lys
 1940 1945 1950

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<212> DNA
<213> Homo sapiens

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gatggattat ttttattttc tttatgtatt gtgtgcttca ataccctaata aaataatatt 180
agctagggtc actgatgtat agaactcttt tctacattta gatatttctt gcaaatgttt 240
taccagaaag caacacaaaa atactatcag tgagtatgtg ttacactgt tctctaagga 300
gtcaaattcc tcaccttgaa aataattcat cccaggaaga gaaaagggtt tcaaaagact 360
agagcaggcc acaaggaggc tttcgcaaaa ctctacacgt aaagggtaat gtaaaactta 420
aacctatttt tcaaacagta atttatatat cttttaattt tagtagttta tgtgtgaaac 480
aatcatgcaa aacaacaaag tgataaaatt ttttaaaaaa attagtgaga tgcaaataac 540
tgaatatgta aaagggtctca tacatattta tatgtagtag ataagttaca tttttttagt 600
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ttacaggaaac caaaggcatc gtttgatgtg taaactgctt actatttctt tatctttcaa 1260
agaaaataga gcctgtctgg aaatgggtgat ttatgggtaca tactaggcat caatgggtctt 1320
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<211> 840
<212> DNA
<213> Homo sapiens

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tgggtccatt cttcctaaat catgctaggg catgctttta acaagggtca aatatcttgc 180
tttgcacat ccttgctttc tcgatccagg gccataaaaa aaaaaggaaat aaaaccaga 240
cacagagcca gagcaccct atgccaatg tcaaagatta taggctaatt tcacctgtat 300
tctctttcta cagagattat ggagcaagaa aactgaagcc aagccacatc aaggtttgac 360
agggatgaga tacctgtcaa ggattcatag tagagtggct tactgggaaa ggagcaaaga 420
atctcttcta gggatattgt aagaataaat gagataattc acagaaggga cctggagctt 480
ttccggaaaa aggtgctgtg actatctaag gtaactaaac aacttctggg tataagtttg 540
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atacatagac ggagacatag cacagatgac cttagggaat ggaatgatgc caaaggctgt 720
tgatgtaaga aagagagatt aactcagttt tttttttgtt tttgtttttt tgttgtgtt 780
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<210> 71
<211> 780
<212> DNA
<213> Homo sapiens

<400> 71

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ataaaattat gtaagaactc tgtataataa gctcacagag tacaagaaag gagaggaaaa 180
aagtaaaaga gaactgcgaa agaactatga gggattttcca aacagcaaaa ttgtcattga 240
agccatgaga aactctactc actaaattct ttaattttctc agcctaccca aatattgggc 300
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tcaaattctt tattccagcc cttgataagt aaataagaag gtaaaggact atttatttgt 480
aaaaagtttt tcatgatttt gtgatggcac cttgttccat atcatctcag ataaatcaga 540
ataatttgtg aaaattactc ggtgatttcc acattagata ttttaaacct aatgtttatt 600
ctaaaacaaa aaccaaccag gagaatccaa ttaagtaaaa tgtatgtatt aatataaatt 660
agctattccc atctggaaaa gggcagccat ttctgtgttg aggtgcctca atgatactga 720
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<210> 72

<211> 1025

<212> DNA

<213> Homo sapiens

<400> 72

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agaatttttt aaatgctttt aaaaaatgga caaaattata gatattcttg agtttaaata 180
taatgtttat atattatata tactgtacat tgtagaatgg cttaatcaaa ctaattaaca 240
ttaagtacag acttttgata gatttatgaa cttggcttat tgagaatgag gttgaatgat 300
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cctaactctt gtgcaatttt tctttttatt gcaggtaatt cgtatgcaag aagctacacg 480
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aaagccaaga agcccaaaaa ggaacaagat aatgatgatg agaacaaacc aaagccaaat 660
agtgaacttg aagctggaaa gaaccttcca tttatttatg gagacattcc tccagagatg 720
gtgtcagagc ccctggagga cctggatccc tactatatca ataagaaagt gagtattgat 780
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atatacagca tcacaatttt tcttctgtta aagattttat aatactcttc actgtcactt 900
atttttatca caatataata aaacaaacat ttataagaaa tgaagtcaag agttgggttac 960
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<211> 433

<212> DNA

<213> Homo sapiens

<400> 73

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ctccttaaat aagcccatgt ctaatttagt aatttttact gtattttctg tttcagactt 180
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cttttaattg gaattgccta aatgctatct ctaacagttg atttttaaga aaatgtcagt 360
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catttatttg cat 433
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<210> 74
<211> 450
<212> DNA
<213> Homo sapiens

<400> 74
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atttataaat ggccatggta acctactaac atttattcct taactataat ctactttatt 180
cagcatgctt atcatgtgca ctattttgac caactgtgta tttatgacct tgagcaaccc 240
tcctgactgg acaaagaatg tagagtaagt aggaataact tctgggaatg agaaatgcac 300
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<211> 701
<212> DNA
<213> Homo sapiens

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accagattag attcctaaag aatataattt ctcttcagtt taactctttg ctcaggcttg 180
taaaactaac taaatgaata gattatttgg taaatagaag taaggaacaa tattttaatg 240
aattgaaaaa ccacaaaagg ataggatttg ctatgattga aaacatttat tttaacagtt 300
caagcaaaat tgtaattttt ggcttggatg tttttcctag gtacacattc actggaatct 360
atacctttga gtcacttata aaaatcttgg caagagggtt ttgcttagaa gattttacgt 420
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agaatacata ttagaataca tattgcaatg taaatatatc cagtaaatga tcaataaatg 660
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<210> 76
<211> 286
<212> DNA
<213> Homo sapiens

<400> 76
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aagcctaggc aatgtttcag cccttcgaac tttcagagtc ttgagagctc tgaaaactat 180
ttctgtaatc ccaggaaga agaaactggg gtaaggtagt aggcccccta tatctccaac 240
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<210> 77/
<211> 515
<212> DNA
<213> Homo sapiens

<400> 77
gtaagaagaa actgggtgtaa ggtagtaggc cccttatatc tccaactttt cttgtgtgtt 60

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attgtgtttg tgtgtgaact cccctattac agatatgtga cagagtttgt ggacctgggc 120
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taaagtcagc ctttgagttt aacagaaaat tgcagagac atcttcaaaa aatgctaatt 420
tgggcctctt gcgctctctc tctctctttt tcactaccat ggctttacta acagatttgg 480
atthttaccat tgcgtgcaga tgtagttcaa aaatg 515

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<210> 78
 <211> 564
 <212> DNA
 <213> Homo sapiens

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<400> 78
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aatggcacia tggattcaaa tgggacattt gttaatgtaa caatgagcac atttaactgg 480
aaggataaca ttggagatga cagtaagaag tattacatta tgtaaacctt agtgttgctg 540
aatgaatttt caactataaa tagt 564

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<210> 79
 <211> 497
 <212> DNA
 <213> Homo sapiens

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<400> 79
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aggtcacttt tatgttttgg atgggcaaaa agacccttta ctctgtggaa atgggttcaga 180
tgcagggtaa gaaacataat atatatTTTT aagatataga actctttgcg aaaaaaaaaa 240
gtaggtagga aaacaactac atggttatat gtgtagcctt accatgtatg caataaagag 300
cagtgtctgt cccctaggaa gtgccttgtc tgccttaccg gattgccact ggtcctaacc 360
tcacagcaat taaaaattat ccctttgtga agacccttcc ccaaaatttc acagttaaga 420
tgttcttaaa ttgatgtctc aatgtgtgaa ggcccagagt ctgtctttgc tgtacatcta 480
tcagagctgt taggaaa 497

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<210> 80
 <211> 501
 <212> DNA
 <213> Homo sapiens

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<400> 80
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tcatctgata agtttcacgg tgggcaatca cctaaagtgt tctggaaatt aaagcaagat 180
aattcgtcac agatagcagc tttgggtttt gaaaattcct ataagtcaaa taaattgaaa 240
ttgctgtaat ttctaaactg accctacctc catttctctc tcttatagcc agtgtccaga 300
aggatacatc tgtgtgaagg ctggtcgaaa cccaactat ggctacacaa gctttgacac 360

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ctttagctgg gctttcctgt ctctatctcg actcatgact caagactact gggaaaatct 420
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 aatgaaaagc ataggctgag t 501

<210> 81
 <211> 432
 <212> DNA
 <213> Homo sapiens

<400> 81
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 catacatgat attttttgct ctgggtcattt tcttgggctc atttttatttg gtgaatttga 180
 tcttggctgt ggtggccatg gcctatgagg ggcagaatca ggccaccttg gaagaagcag 240
 aacaaaaaga ggcgaattt cagcagatgc tcgaacagct taaaaagcaa caggaagaag 300
 ctcaggtact gagtataaaa mgcaaagatt tatcattatt attmttagtt tctaagtaga 360
 aatagtgtta tactatagag ggtagattgg aactgctttt tcattttata tatmggcatt 420
 gtcattagac ac 432

<210> 82
 <211> 489
 <212> DNA
 <213> Homo sapiens

<400> 82
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 gttggaaagt tcttcagaag catcaaagtt gaggttccaaa agtgctaaag aatggaggaa 180
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 cagctttccc aaatccgaat ctgaagacag cgtcaaaaaga agcagcttcc ttttctccat 300
 ggatggaaac agactgacca gtgacaaaaa attctgctcc cctcatcagg tatgattttc 360
 tactaagtgc tctggtttct ttgtcattgc tattgctttt tagtttttgt attttgtttt 420
 ggtacacttt tgtactatct gtacttcagt tgagggacag ggaactaaca tttaatatag 480
 ttgtttaaa 489

<210> 83
 <211> 653
 <212> DNA
 <213> Homo sapiens

<400> 83
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 aaaaacactc tttgtactta aatttgcttt aataaaaata tcaaaatata tgtgtcctct 120
 ataaatttga ttatccatgt ttaagggcaa gagtatacta actccaaaga aaacagatcc 180
 tttaatatta atatttatta aataattgctg ttcttcccct acccccatcc cattcctttc 240
 ctttttgctt tctctgcagt ctctcttgag tatccgtggc tccctgtttt cccaagacg 300
 caatagcaaa acaagcattt tcagtttcag aggtcgggca aaggatgttg gatctgaaaa 360
 tgactttgct gatgatgaac acagcacatt tgaagacagc gaaagcagga gagactcact 420
 gtttgtgccc cacagacatg gagagcgacg caacagtaac gtttagtcagg ccagtatgtc 480
 atccaggatg gtgccagggc ttccagcaaa tggggaagat gcacagcact gtggattgca 540
 atgggtgtgg ttcttgggtg ggtggacctt cagctctaac gtcacctact gggcaacttc 600
 cccagaggtg ataatagatg acctagctgc tactgacatt attcaccaat ttg 653

<210> 84
<211> 566
<212> DNA
<213> Homo sapiens

<400> 84
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gcaataattc aatattttat tcttgaaatt cttacctgga aaattgcatg tagcatgatt 120
tgcaagaaa tgctatgtgg tgttgatatta cttattggga agagtgggtt gagccatcag 180
tatttggttt gcagggcacc accactgaaa cggaagtcag aaagagaagg ttaagctctt 240
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ccagcattct gaccaacaca atggaaggta agagcaggtc atggaacagc caactttctg 360
tgattatgtg ctttggtgaac tattccttct tttcatagaa ttactgaagt ctgttaccac 420
gattcgaacta tatattagac ctaagaatgt gatatatggt gtacattatc acattgntta 480
caaaactaat attggcctta ttctttttga cttgggtcct taccttactt gcagagtgat 540
atttcaacac ttgatattat atcaat 566

<210> 85
<211> 748
<212> DNA
<213> Homo sapiens

<400> 85
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aaaaagtcca tctatatgac attttaatta acattttctg aaaatattta atgggattgt 120
cttctcaagt ttcttaagta atatgaactt ctattttcaa atataagcat caattttgtt 180
aaataatgta aaatctacta gcaataataa ctcatTTTTTg ttgttattta ctactcttcc 240
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gatttgccaa tgtgttcttg atctgggact gctgtgatgc atgggttaaaa gtaaaacatc 360
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taaataccct ctttatggcc atggagcact accccatgac tgagcaattc agtagtgtgt 480
tgactgtagg aaacctggta agtacatttg aagtttactt atttactttg gtagatgtgg 540
gagagataga ccaaagggaa agatgtattt gtgctgtgtt gaacccaaaa attatatcct 600
ctttcctcat agaaagaaat atctaaggaa tattacaggg aatctcagag atacagccta 660
aaactcaact ggtatgaatg ctgattgttt aggccaatgt ctgtgctgat tgatcatggt 720
gtcttaccag ttgtaaactg ctcaaaa 748

<210> 86
<211> 664
<212> DNA
<213> Homo sapiens

<400> 86
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tgtctaattg tcttctttat aaattcgtgt agcatcagtg ttttcagtg ctttgatagt 120
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tgcatcatt cagactggta tctatttata tatatccctg tcgctcattg gcacaacatt 360
tattttgaaa ttgaatcaat gtatatttat ataattatta attttaattt taaatttaca 420
tcaatatgtg acattctaag aaaacatgta aacatccyct ttaaagctaa accattttct 480
aagaatgatg aaagcattca aaatactcta taatgattag gtatgtaggg cacattagaa 540
aacctacaag tactttctaa aactgtgttt taagtttatg aagctttttt ggccttacag 600
tctgtaaaga tacgcaaata aaaatttaga cccagtttaa ttttagcttt ttattaacct 660
tact 664

<210> 87
<211> 750
<212> DNA
<213> Homo sapiens

<400> 87
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ccacgtgtgg ttctatgata ccacatacta ataaaaataat gtctaaaatt atattatgat 180
tactactaac agcatctttt cacttgatta cagcttagag ttttcaagtt ggcaaaatcc 240
tggcccacac taaatatgct aattaagatc attggcaatt ctgtgggggc tctaggaaac 300
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ggtaagagct acaaagaatg tgtctgcaag atcaatgatg actgtacgct cccacggtgg 420
cacatgaacg acttcttcca ctcttctctg attgtgttcc gcgtgctgtg tggagagtgg 480
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atgttgggtca tgggtcattgg aaaccttgtg gtatgtatgt agtacaaatg ctcataaatt 600
agaacaagag cagacagtag ctaggaacgt ggccagatgt agtaaacata tctctggttt 660
atagtaagtg gcctagactg aaatccccct attagcactc agagaataag caagttattt 720
aacttctcct gggctctggt ttccccat 750

<210> 88
<211> 768
<212> DNA
<213> Homo sapiens

<400> 88
ccttagagca ggatattagg tcctttaaaag agtgtgtgac ttagacatgg catctgaaat 60
atagtaagca ttcaataaac atttgttgaa ataattttag caaagatcta tgagttccct 120
ttttaggctg ttattttaat gcatatttca atattaarat aggcattttt ctttttttct 180
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ctgctactga tgatgacaat gaaatgaata atctgcagat tgcagtagga agaatgcaaa 300
agggaattga ttatgtgaaa aataagatgc gggagtgttt ccaaaaagcc ttttttagaa 360
agccaaaagt tatagaaatc catgaaggca ataagataga cagctgcatg tccaataata 420
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tcataaaciaa cccagacctc accgtcacag tgccaattgc tgttggagag tctgactttg 600
aaaacttaaa tactgaagag ttccagcagt agtcagaact agaagaaagc aaggaggtaa 660
ggaatgcttt taaatttttt gttccatttc ctatgataac catgtactac agttatttac 720
tattttcatt gtgcttatat gcattatcga aaagcaatga ttgtaagt 768

<210> 89
<211> 471
<212> DNA
<213> Homo sapiens

<400> 89
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ttttcacaca atgacacagt atttccagat tagttaaata aaagggggaa aatcacatct 120
ttgaaatggg attttgtttc cagaaattaa atgcaaccag ctcatctgaa ggaagcacag 180
ttgatgttgt tctaccccga gaaggtgaac aagctgaaac tgaacccgaa gaagacctta 240
aaccggaagc ttgttttact gaaggtaaac aagctctgat gtgattaaat acaatctccc 300
cttgttcttt acggagactg aatatgcctc atttaaaaaa aaaaatttag caaacgaggt 360
gtgggtggct atgcctgtaa ccccaaaatt ttgggaggct acggtaggag gattgcttga 420

ccccaggagt ttgagaccac cctgggaaat gtagtaaggc tttgcctcta c

471

<210> 90
<211> 623
<212> DNA
<213> Homo sapiens

<400> 90
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attaactata ttttattttt aggatgtatt aaaaagtttc cattctgtca agtaagtaca 240
gaagaaggca aagggaagat ctggtggaat cttcgaaaaa cctgctacag tattgttgag 300
cacaactggg ttgagacttt cattgtgttc atgaccttc tcagtagtgg tgcattggta 360
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cagatgcaaa cactgagctt cagaatcaaa agaaaaggca tatctgtgtc ttgcagagct 480
tggcacccaa ggtttaacga tgcaaaattc agttctgaac aaatcagcac catgaaacag 540
ccagatggaa tttctcatct ggtgtttatc taacagatgt tttcctcact gagacaacca 600
tttcagaga cattctgtaa cca 623

<210> 91
<211> 520
<212> DNA
<213> Homo sapiens

<400> 91
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ccatttaagt aaaataaaat atttttgatt cataggcctt tgaagatata tacattgaac 180
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atgacataat tatgcagtta tttaaacaaa actgtaacat atgcaacaat gaggaatatc 480
tcatgggaaa gagtagagga ggtcctaaac atgggcagtg 520

<210> 92
<211> 595
<212> DNA
<213> Homo sapiens

<400> 92
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agaatagaca ctctaattat tcatgtcaaa aattacatgt aggtaatgat ttagatagaa 540
aagggtgcc a tactcttctg atatttattt caatagaaat tacagaatta gaagc 595

<210> 93
<211> 787
<212> DNA
<213> Homo sapiens

<400> 93
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<210> 94
<211> 438
<212> DNA
<213> Homo sapiens

<400> 94
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gtaattttaa cactgatata tccaaaattc tatattagaa catttaatat tgcatataaa 360
aaatgaacag tctgcttcaa tatagatgat gcttgattaa tgtgtgccta atatacaata 420
tgtagcta atgaaacg 438

<210> 95
<211> 637
<212> DNA
<213> Homo sapiens

<400> 95
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actagatcat actagtttta aaaaattgtt tttgtagaac aatatctcag ggtaaggcaa 120
aagtagcact gtattaagta acagcactca ataaattact gatttagtgt aagtatttat 180
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cactctgaat ctattcattg gtgtcatcat agataacttc aaccagcaga aaaagaagat 360
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tctccagtgc tttagcttgg cttacagagc ctttcag 637

<210> 96
<211> 637
<212> DNA
<213> Homo sapiens

<400> 96
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aagcaggata aatgtatatg taggaggata atatccactt aaaaattaga aaagattaaa 180
ggaaagacaa atatttttttg tgaaagtact attggaacac agaattgtaa ccagttttat 240
actatgtctt tactttggag gtcaagacat ctttatgaca gaggaacaga aaaaatatta 300
caatgcaatg aagaaacttg gatccaagaa acctcagaaa cccatacctc gccagcagt 360
aagaattact tgtctccttt aatgttccaa agccatgcgt ccatatggtc aaattgagca 420
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catattttgc atcataattc acaacttctg cactcattag gagttaccac attccaaaaa 540
aaggaggtaa tgttctttat aatttgtgag ttgaaaactt ctagctcagg gttcctaata 600
aatacttcca aagcaagggt cactttcctg ctaccaa 637

<210> 97
<211> 759
<212> DNA
<213> Homo sapiens

<400> 97
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gaagagaaaa aaagcacaca aaattgtttg gggtaatatg aggaggggtgc acatccatcc 120
cgtatgtgga agggctttat ctacaatttt actgcattat tctttatgaa atatatatag 180
taaccttatt tctcttctct cactttctag aacaaattcc aaggaatggt ctttgatttt 240
gtaaccagac aagtctttga tatcagcatc atgatcctca tctgcctcaa catggtcacc 300
atgatgggtg aaacggatga ccagggcaaa tacatgacct tagttttgtc ccggatcaac 360
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<210> 101
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<210> 107

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<210> 112

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<210> 114
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23

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oligonucleotide

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22

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23

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22

<210> 133
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oligonucleotide

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oligonucleotide

<400> 136
tttgaggggg ccaggaag 18

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oligonucleotide

<400> 137
cattgtggga aaatagcata agc 23

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<210> 139
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<400> 139
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<210> 140
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<400> 141
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 oligonucleotide

<400> 142

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22

<210> 143
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oligonucleotide

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cacccatctt ctaatcacta tgc

23

<210> 144
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oligonucleotide

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23

<210> 145
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oligonucleotide

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20

<210> 146
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oligonucleotide

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21

<210> 147
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oligonucleotide

<400> 147
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<210> 148
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oligonucleotide

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<210> 149
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oligonucleotide

<400> 149
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<210> 156
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oligonucleotide

<400> 156
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21

<210> 157
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oligonucleotide

<400> 157
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<210> 158
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<223> Description of Artificial Sequence: synthetic
oligonucleotide

<400> 158
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18

<210> 159
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oligonucleotide

<400> 159
ttgacatcga agacgtgaat aatc

24

<210> 160
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oligonucleotide

<400> 160

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23

<210> 161

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oligonucleotide

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23

<210> 162

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oligonucleotide

<400> 162

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23

<210> 163

<211> 24

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oligonucleotide

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tccagcacta aaatgtatgg taat

24

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<210> 170
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oligonucleotide

<400> 170
ctgggatgat cttgaatcta atc 23

<210> 171
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oligonucleotide

<400> 171
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<210> 172
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oligonucleotide

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<210> 173
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oligonucleotide

<400> 173
caaagatcac cctggaagct cagtt

25

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oligonucleotide

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25

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23

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21

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24

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<400> 178
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22

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oligonucleotide

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17

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aaggggtgca aacctgtgat ttt

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agggccatgt ggttgccata c

21

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oligonucleotide

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caatccttcc aaggtctcct atc

23

<210> 186

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22

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<400> 189
gcatttgaag atata

15

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<400> 190
gcatttgacg atata

15

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<400> 191
atcatatcct tcctg

15

<210> 192
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<400> 192
atcatatmct tcctg

15

<210> 193
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24

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24

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oligonucleotide

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<400> 197
agtgcattgta actgacacaa tcac 24

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cttgcttcc tgtttgggtc tct 23

<210> 199
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<400> 199
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<400> 200
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<210> 201
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<400> 201
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24

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oligonucleotide

<400> 202
tttggaat gtgtagctca ataa

24

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oligonucleotide

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22

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oligonucleotide

<400> 204 /
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22

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<210> 206
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<400> 206
 ataggctccc accagtgatt tac 23

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<400> 207
 agggcccctta tatctccaac tg 22

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<400> 208
 caacaaggct tctgcacaaa ag 22

<210> 209
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cttggtggct tgccttgac

19

<210> 210

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<212> DNA

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20

<210> 211

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<212> DNA

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20

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<212> DNA

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20

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<400> 213

tttttaccgc ttgctttctt ta

22

<210> 214

<211> 24

<212> DNA
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oligonucleotide

<400> 215
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<400> 216
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<400> 217
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oligonucleotide

<400> 218
ctaagtcact tgattcacat ctaa 24

<210> 219
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oligonucleotide

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acagggtggc tgaagtgttt ta 22

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oligonucleotide

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oligonucleotide

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caattagcag acttgccgtt att 23

<210> 222
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oligonucleotide

<400> 222
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<210> 223
<211> 24
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oligonucleotide

<400> 223
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24

<210> 224
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oligonucleotide

<400> 224
aaaggaccgt atgcttggtc acta

24

<210> 225
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oligonucleotide

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24

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oligonucleotide

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24

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<400> 227

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24

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24

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tcagaggggt gctttcttcc acat

24

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24

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oligonucleotide

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20

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<400> 237
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23

<210> 238
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oligonucleotide

<400> 238
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24

<210> 239
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oligonucleotide

<400> 239
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24

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oligonucleotide

<400> 240
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23

<210> 242
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<400> 242
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18

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<400> 243
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<210> 244
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24

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23

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oligonucleotide

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19

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oligonucleotide

<400> 247
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19

<210> 248
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oligonucleotide

24

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24

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24

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<210> 253

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22

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oligonucleotide

22

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24

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24

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24

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23

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oligonucleotide

19

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oligonucleotide

23

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oligonucleotide

22

<400> 262
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oligonucleotide

19

<400> 263
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oligonucleotide

24

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oligonucleotide

24

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oligonucleotide

<400> 266

22

ggaggctaaa ggaaagagta tg

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oligonucleotide

<400> 267
attttatagc cagcaaagaa cac

23

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oligonucleotide

<400> 268
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20

<210> 269
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